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Technology is truly personal

As many of you know, we've been on a massive hiring drive for the past couple of months. In almost every issue we slipped in a blank page, which was a clever call (we think) for applications from our readers. A lot of you wrote in saying you have what it takes to fill that blank page. The applications kept flowing in by the dozens and we had to reject quite a few. Sorry guys.

We eventually found the chosen ones who will bring balance to the 'force' (sorry, couldn't resist), but this column isn't about how difficult it is to get into Digit (quite difficult in case you were wondering), it's more about a particular insight I had while interviewing the many candidates who applied.

One of the most common questions we ask here at Digit is "what does technology mean to you?" or in other words "what is technology to you?". A seemingly innocuous question, it invariably foxes almost everyone.

Once they recover from their deer-in-the-headlights moment, the interviewees go on to define their understanding of technology. We've got a whole multitude of answers so far including absurd gems like "for me technology is God!" (we really thought it was Google).

For most, technology is smartphones. It's unbelievable the number of hours people spend on XDA forums, rooting / jailbreaking their phones, customising the look and feel, and generally tinkering around with a device that was primarily meant to be just a means of communication.

The older generation of geeks – a dying breed now – think PCs are synonymous with technology (I might be one of them, but I'm too busy playing *Borderlands 2* to care). Some DIY enthusiasts we've spoken to who live and breathe electronics, microcontrollers, and circuits, believe robotics and engineering is technology.

My friends at CERN and JNCASR (sorry I just have to brag) think technology is an entirely different ballgame. Understandable right? I have friends working in industries that are so far removed from anything tech such as artists, linguists, gym trainers – for them, technology is something as simple as social media.

The revelation though is that if technology can mean so many things to so many people –

it perhaps means technology truly is personal. Gives a new meaning to the term "personal technology", doesn't it? Incidentally it also happens to be the space your favourite magazine mainly dabbles in.

And it makes sense too, considering how emotional we get about technology. The PC Master Race, Android vs. iOS, Playstation vs. Xbox – these are just small examples of how caught up we get with our technology.

The more I thought about it, the closer I got to the truth: Technology is not personal. It never is.

Tech is just tech. It is we who make it personal.

Like with the place you call home – history played its part and decided that this is to be your motherland – your ancestors paid the price (sometimes) with blood and wars and famine. Now you live here and call it your own and it is personal to you – to you, your country means something in a unique way (else it's just a piece of land, right?).

Even with tech, it's how you use it that makes it personal – you tend to own it after you use it. HTML is just code – the way you once used it to create your blog (years ago) suddenly makes it personal to you. A phone is just a phone, then you buy it, you buy into its ecosystem and suddenly it's your phone. At a broader level, think about how rockets propel satellites, but could (and sadly do) propel warheads too.

Like most things, technology is just a tool. Once you adopt it to serve your needs it becomes personal to you.

To conclude I leave you with the same question, not as a test (which was the purpose of the question when we put it to our applicants), but as a way to get some interesting opinions:

What is technology to you?



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"One of the most common questions we ask here at Digit is *what does technology mean to you?*"

Let me know at:
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My tech resolutions



Jayesh Shinde
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"There's a very fine line between essential (tech) and addiction and we should all learn to recognise it."

Before I started writing this month's column, I was reminded of my column from exactly a year ago. Back then I cribbed about how technology overload can throw your life off balance, if you aren't careful, and my (then future) endeavour to curtail technology's irritating influence through 2015. To that effect, I'm happy to report that I have successfully exorcised some of my technology demons. This year has been a satisfying effort in my quest to drag myself out of a tech-triggered quagmire. Apart from keeping my phone turned off on weekends, it's always been on silent mode (with notifications for everything except emails switched off) and this has helped me not feel constantly connected to my phone – definitely no phantom phone calls anymore, woot! I have also greatly reduced my social media minutes, freeing up precious hours spent on other productive ventures (more reading time, for instance). While tuning into music off my phone, I make sure I put it on airplane mode if I don't want to be distracted. Little things.

Enriching experience this endeavour has been, I must say. While doing all this, I also realized something important. It's not as much to do with multitasking but immersion. I can multitask when required but I was trying to be less distracted by technology. Just like when you're gaming you don't want your PC's antivirus to keep popping up and when you're watching a movie you yell at commercial breaks, similarly I was conditioning myself to not be distracted by digital, social, and online triggers. I want to be able to look aimlessly out of the train window or spend some quality time with my friends and family away from the Internet and my smartphone.


You, too, should give this a try, if you haven't already. Technology is an integral part of our life, no doubt, it would be foolish to suggest anything but. However, don't let its triggers negatively disrupt the balance you're trying to strike. There's a very fine line between essential (tech) and addiction and we should all learn to recognise it.

Onwards to my list of resolutions for 2016. I'm not trying to shoot for the moon, instead focusing on making one or two tiny changes in my life – with the help of technology, of course.

Needless to say, the climate change debate has been of personal interest to me – last month India and the World vowed to fight global

warming with renewed vigour. After experiencing a sweltering summer from February through November of last year, I'm going to try and make a difference to minimize my energy impact going forward this year. Saving the planet is crucial to our existence and once again technology will come to our rescue, if only we decide to be a little more open-minded and concerned about our impact on the world. After seeing a solar power bank that works, innovative (power-saving) lighting solution, and realizing the potential of DIY hacks to automate and conserve power around the house, I am confident of endorsing an eco-sensitive tech-powered lifestyle in 2016. Fingers crossed.

Can technology be good for your health? Of course! As much as I rant about distancing yourself from technology's ill effects, I have come to realize that embracing helpful technology gadgets can lead to a positive lifestyle. I've been using several fitness bands over the past two-three months, and I've seen how it's acutely made me aware of my physical activity levels, or lack thereof. This year, I am going to ensure I sleep better and move more thanks to fitness trackers for positive self-reinforcement. At the end of a hectic day, it's good to see that you've walked so many steps, or when you wake up in the morning, it's insightful to analyze your sleep cycle. Anything that helps you stay motivated, help you achieve your fitness goals is worthy of embracing into your life. I'm also going to take a deeper dive into mobile gaming this coming year – probably invest in a phone controller, too. Not that I'm tired of gaming on my PS4, I don't want to miss out on the best of mobile gaming this year. Hey, blowing off steam through technology is important, too!

Enabling you to do everything better is essentially what technology strives to do. And when you practice self-restraint, it enriches your life even more. Or at least that's what I've experienced. Embrace technology wherever necessary and leave it be where it isn't. At least that's my mantra for 2016. What's yours? 

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PlayStation Experience 2015

Catch the entire PlayStation Experience keynote where several developers and studios presented a sneak peek into the upcoming games on PlayStation.

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- Jet Racing Extreme Demo



Change your mind

As you have already seen from the cover, we're starting 2016 by looking forward, but not with a what to expect this year story, but a what to expect this decade (or more) story.

Based on what we know of our readers, although spread across the age groups of 8 to 80, the majority of you are what most would consider to be "youth" (under 25). For all practical purposes you are the future of this nation, and perhaps the world.

Since we're starting the new year with telling you what technologies and ideas will disrupt our future, I suppose it makes sense for me to go the other way and tell warn you of one very real threat to true innovation. A dangerous but usually unnoticed trait in all of us, which makes us hang on to the past, clinging to it for dear life, looking for something familiar in this sea of newness. I don't know what to call it, so let's just go with intellectual inertia.

So what do I mean when I say inertia? You know when something is familiar, and you've gotten used to it? You feel like it's the best thing ever, to have that familiarity. When change does come along, it has to drag you forwards kicking and screaming sometimes, because you just love the old way of doing things.

Let me try and illustrate this further with examples.

Gmail may seem to be the way email always was to many of us. The conversation view, the labels... it's all so... so... perfect! Some would beg to disagree. There are many people who still prefer the old Microsoft Outlook way of showing and working with email. There are many who still refuse to give it up. Obviously as a person who prefers Gmail, I tend to look at them as suffering from inertia. There are many who will say, "Email? Who uses that anymore?" and accuse me of intellectual inertia.

Newer isn't always better, however. Take Windows 8 as the next example. Perhaps on the tablets that it was designed for, the interface was good. However for someone using the good old mouse and keyboard, being forced to use a tablet interface felt like Microsoft had gone bananas! I'm still on Windows 7, because I tried upgrading to Windows 10, and it started crashing randomly. Thankfully I was able to downgrade easily. However, Windows 8 I avoided like the plague on the desktop.

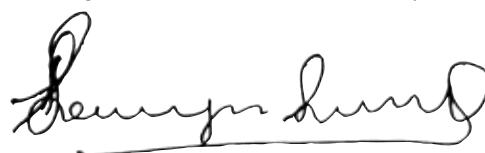
Microsoft actually may have been suffering from such inertia for a lot longer. I remember Bill Gates launching a Tablet PC way before Apple even dreamt of the iPad. The main reason why Microsoft's tablets bombed? Intellectual inertia. That was the time they did the reverse of the Windows 7 and 8 fiasco. They took an OS developed for a mouse and keyboard, and tried to force it on to a tablet. In hindsight, when you compare Windows XP Tablet edition to iOS, we know why the former failed...

Now, however, I think everyone is making the same mistake again, by trying to use a touch interface for everything. With the Internet of Things being so widely hyped, everyone wants to build connected devices with touch interfaces. Even stupid things like printers have tiny touch screens, when they're not needed. Perhaps you can understand why the manufacturers are adding them... you have to admit that you think a printer with a touch screen just looks a lot cooler than one with buttons. That's mental inertia at work, not just on the manufacturer's side, it's inside us as well.

Some car entertainment systems are going all touch screen. It's ridiculous. How is it we realise that poking at a touch screen phone to type a message is very dangerous when driving, as it distracts you from the road, and then have a touchscreen interface for a car that rivals a smartphone's complexity. Of course drivers shouldn't be fiddling with settings when driving... but then again we also know that driver's shouldn't be texting when driving, and yet they do both...

What we really need is to get over this inertia, break the molds, and give every new interface a try. I think the days of touch are numbered (you can read more about that in the cover story), but we're not going to let it die out as easily as we should, because of inertia from both manufacturers as well as users.

As more and more of you become makers, start influencing technology, founding startups, developing tech for big companies, or even just being a consumer like I am, I hope this little column will leave enough of an impression on you to overcome the inertia, be more accepting of change, and move forward more freely. 🇮🇳




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"You know when something is familiar, and you've gotten used to it? You feel like it's the best thing ever, to have that familiarity. When change does come along, it has to drag you forwards kicking and screaming"

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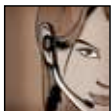
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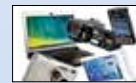
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'Close up' the internet!

Donald Trump thinks he can get Bill Gates to 'close up' the internet, you know, like a leaky faucet. <http://dgit.in/CloseUpInternet>

✉ The reason I write this email is the December issue and the plethora of articles it carried. Being a student of Computer Science, an originality enthusiast and a geek at that, I too agree with your views that maybe, just maybe, every "new" idea may not be original. It sure does drive one to question: "Is the present really original?"

Questions aside, this month's articles on Deep Web by Dhinoj, Intelligent life confirmed by Sandhya Ramesh, React JS dealt by Kshitij and the concept of using Arduino to smartify (as I like to call it) one's home took me back to the summer internship I took up this year at Cybereye Research Labs and Security Solutions. We designed a cross-platform application using React and Flux. It's a framework to provide full financial transparency of an NGO (in fact, *any* NGO). Also, we were trained in the basics of IoT, as part of which we designed a smart door unit and were given a hands-on session in network security and hacking.

My request is, if you're going to do an issue on Hacking and Network Security, I suggest that you consider writing a piece on Cybereye Labs. Please visit <http://cybereyelabs.io> and <http://maketheworldwonderful.org>

—Venkata Abhinav Devaguptapu

📌 Thank you so much for writing in. It's detailed feedback like yours that makes it all worthwhile. I'll definitely check out Cybereye Labs.

—Siddharth

✉ This is my first time writing to you. Your magazine is terrific, but you've had enough buttering up already. Getting to the point, your magazine has unique and creative content, but it's the same plate of roti dal. Add a few spices.

Your creative presentation skills are dropping. Your writing remains terrific undoubtedly, but you can change presentation and layout, among other things. Also, your cover stories on SKOAR! are bleh. Do a story on how to have a proper gaming session or carry tips and reviews of gaming gear in the gaming magazine. It would be great to see a startup page in your magazine. People can send in ideas

Feedback for the December 2015 issue of Digit



and you could feature them. Waiting for my "Digit would like you to work for them" letter.

—Arjun Yadav

📌 We agree. Perhaps we have let the ball drop a little too often in terms of presentation. We are very aware of our shortcomings in that field, and we hope to be able to improve drastically over the new year. You have our word. We will certainly take your other suggestions seriously and work on them as well.

—Robert

✉ I like calling myself your #2 fan (#1 has already been claimed by others.) I liked this month's *Fallout 4* poster. However, I was expecting *COD: Black Ops 3* (You guys are unpredictable, and that's good!) The *dmystify* on Solar System was the topic I was waiting for since the *dmystify* booklet was started. Really rich content and awesome explanation. I'll keep the 'Rewind' booklet in my safe, for it has nearly all the tech happenings of 2015 and I frequently need such data for quizzes and competitions. This time's SKOAR! was better than expected. You did a good job on the cover picture. Thank you so much for the *Star Wars: Republic Commando* and other games on the DVD.

Uncle Robert, your article on privacy was awesome! My only concern is that even if the government or organisations just use our data for surveillance and monitoring purpose, we can't expect the same from system breachers or hackers. I also found the article on Darknet interesting, because it includes lots of things you don't normally read about in your daily life. This issue, according to me, was the best issue of the whole year. It's so good that even if we compile all of this year's issues in one magazine, it won't be comparable to the December Edition.

Finally, I'd like to see a Fast Track on 'Indie Gaming' with lessons on all its key elements – from thinking to making. And a *dmystify* on 'Time Travel' or 'Parallel Worlds' would be great.

—Ares358 (a.k.a Sunny Kusbwaba)

📌 Sunny-beta, if you call me uncle again I will send the NSA after you! ;-) Yes, no arguments about needing data to be private from hackers, especially credit card data. Really the question is whether we are OK with an authorised machine reading and flagging certain data as potentially dangerous. I don't just mean terrorism, what about suicide prevention (monitoring Facebook posts for seemingly suicidal behaviour), or tracking pedo-



PSN messenger

Playstation launched an app on iOS and Android to message your buddies on PSN. That's one more way to talk to the same set of people. <http://dgit.in/PSNmessages>



Digital Puppet of Tom

Tom Hanks' digital puppet does things he *ahem* couldn't do on screen. <http://dgit.in/TomHnksPupp>

Inbox

LETTER OF THE MONTH #1

Hi Siddharth my gaming story is tied in with the editorials by Jayesh (tech journey) and Robert (addictions) in the November issue. My profile: 55 years old, no kids, working in a MNC as middle manager and staying in Kandivali, Mumbai. I'm an avid wargamer and have even written for the last regular issue of SKOAR! which was a special on World War 2 games. I love the look on the faces of the sales guys when I walk into a shop, ask for games and am inevitably presented with the query, "How old is your child"? to which I invariably reply "50+".

I'm standing in front of the shrinking PC section. The shelves don't have the kind of stuff that got me hooked to gaming years ago – wargames with regular strategy. (Yes, I know Counter Strike is a strategy game, but then...) I settle for *Civilization* and that classic *Age of Empires III* (Duh, I told you I was old). I have a backup copy of the latter in case the one that's being played regularly by my equally 50+ wife goes bad (I got her hooked on to *Age of Empires* so that she can leave me alone to play my favourites).

My digital journey began back in the year 1987 when I tried my hands at programming. I left the company, but not before acquiring a healthy respect for WordStar and Lotus 1-2-3 (Did I say I was 50+?).

Marriage and 10 years later, it's the late 1990s and I have my own PC. WS and Lotus are now history and replaced by 'Word', 'Excel' and 'Powerpoint,' which neither has the power nor does it make a point. I walked into Crossword and saw a discounted "3-in-1" pack of

strategy games. The first game I ever played was Steel Panthers – a turn-based strategy game. Hooked. Forever. (The other two were Talonsoft's *Battle of Bulge* and Sid Meier's *Gettysburg* – both of which I sadly threw away without knowing the lineage of the developers.) Since then, I've been hooked to authentic war games played from a general's eye view.



I spent (and still spend) an inordinate amount of time hunting down obscure titles paid and free such as *Panzer General* and *Fleet Command* and Talonsoft's games. My first ever RTS was *Fleet Command* – most of the others are turn-based. My utterly favorite RTS games are *Company of Heroes* and *Ardennes Offensive* (downloaded from Steam). I found the gameplay of *World of Conflict* and *Codename Panzers: Cold War* incredibly immersive and enjoyable. Having faced online ignominy, I continue to play against the computer – as and when my job allows (Last night was nirvana – *CoHI* for three hours till 1 a.m.)

I still prefer PC games. Why should I pay more for dedicated hardware when I already have a PC with a GeForce graphic card and 2TB hard disk? I still prefer to sit with an old fashioned physical book (I hate all e-readers), with my favorite track playing on my old fashioned music system (dedicated audio CD player, amplifier and speakers). Convergence may be in right now, but then I'm quite divergent (Pun intended. Yes, I saw the movie).

–K V Ramesh

Your letter was one of the most interesting ones we've ever received.

–Siddharth

philes? There are many ways in which authorities can actually do a better job of keeping you safe with more access to data. It's where to draw the line that the debate is about, and I don't think either extreme is right (total privacy vs no privacy). I don't know about the Fast Track

suggestion, but I can certainly write a time travel dmystify (though it would be less science and more science fiction). Let's see how much positive feedback we receive for this suggestion of yours. If we do, consider it done.

–Robert

I totally agree with you about what passes off as strategy gaming these days. You can rest assured none of us here think Counter Strike is strategy :-)

To this day, I play classics such as *WC3*, *Red Alert 2* and *Homeworld* (Did you check out the remake?) and Activision's 1998 *Battlezone*. The last one on that list takes the cold war to the moon. A story unlike any I've seen till date. You'll like it – it takes the "general's eye view" that you're familiar with to the front lines. So while you control the battlefield you're also one of the players, i.e. you're able to see through that character's first person view and fight shoulder to shoulder with your comrades. This was an unheard of concept in 1999 when I discovered the game.

Coming to your journey with PCs, software and computing, surprisingly I too can relate. Dbase for example brings back memories. I was too young to experience it in real-world scenarios, but I did study it academically :-). Executing copy commands in DOS to copy games on floppies too. Also I've never read a better descriptor for PowerPoint. Hahaha.

P.S. Most of the games you've mentioned I've not even heard of, to be honest. However, my next move is to hit them up in Steam or hunt down some of the more obscure ones on a DOS games archive I've depended on from time-to-time.

PPS. I've eaten humble pie playing my favourite games online too. But it's fun to experience the skill level out there.

PPPS. Go for the Chromecast. With Plex, it will just make watching content much easier.

Drop by our office sometime. You'll find people about half your age, but kindred spirits nonetheless.

I'm a big fan of your magazine. Here are my suggestions:

1. Please update your DVD UI. I think it's very old now and seriously needs a minor reboot.
2. In the next issue, can you provide a Fast Track or tutorial on the Adobe



Print your photos as stickers

Polaroid has launched a \$99 camera called Snap, which will print out your photos as stickers!
<http://dgit.in/PolaroidSnapCamera>



Video calling from Minecraft

Verizon teamed up with a few partners to create a working smartphone inside Minecraft
<http://dgit.in/MinecraftVideoCalls>

LETTER OF THE MONTH #2

☒ Hey Digit! Merry Christmas and Happy new year to ya'll! I love your magazine a lot and like always the December Collector's edition was the best. I loved the Physics of Star Wars article. I found a few Star Wars Easter Eggs in the Bazaar section such as Darth Vader, The Millennium Falcon, R2-D2, C-3PO, Yoda, a Stormtrooper, Death Star. Whose was this really creative idea? Also, I have a question for you: I have sent quite a few emails to Agent001 and your SOS service also, and every time I got a reply within 3-4 days. Surely you guys must be getting a thousand emails every day, how are you



guys able to manage so many emails? Can you guys give a Just Cause 3 poster next month? In 2K16, as usual, new gadgets will come, you will review the gadgets and every month I will wait eagerly for your magazine to read those reviews, even though I can't afford half of those gadgets, and don't need the others, but I'm addicted. Ciao!

—Roban Shah

4 The force is strong with you young padawan... It's something to marvel at, *for even the very wise cannot see all ends*. Can you this time?

—Siddharth

Creative Suite, especially a guide on using After Effects.

—Amandeep Kumar

4 We will change the DVD interface soon enough, though it will get simpler and more utilitarian, and not flashy. Due to the lack of partners to provide us with video tutorials on After Effects, we haven't covered them in the DVDs yet. We can certainly consider an FT to After Effects.

—Abhijit

☒ Hope this email is discovered by a human in your inbox... Calling in. Signal test 1...2...3... OK.

This was the effect of the October issue (the best). I'm halfway through the November issue since I discovered it late in the library.

1. Please provide more quizzes.
2. In the Fast Track, there's plenty of information, but why don't you provide some tutorials in it? It would help a lot.

I also like writing so I'd love to be your minion for a few articles.

That's all MINION007 EXITING.
 That's all Bose. *shhh* Do reply *shhh*

—Sagar Khatri
 (message resent 10 times)

4 Minion existence acknowledged. Anti spam sequence initiated.

—Digit AI

☒ I'm 15 years old and love only two things in today's tech world: gadgets and gadgets! And you too! This is my first letter to you. I recently subscribed to three months trial pack or collector's edition pack of yours. Though you're the best, I have some suggestions that you could take into consideration:

1. Develop your own Android app (not one like Tech tips) which is similar to your website and gives us notifications of every latest update in the tech world right on our phone's screen.
2. Revamp the mag's look.
3. Change your DVD's UI. The UI should be thematic or based on that month's cover story!
4. Organise more tech contests sponsored by you!

Now that criticism is done, let me flatter you a bit:

1. Awesome style of writing indeed. Reading your magazine significantly improves my way of speaking. The credit for that goes solely to your mind-blowing editors.
2. No words left for your gadget reviews.

4 Aye aye sir! We shall try to implement your suggestions. Maybe we could give up on sleeping...

However, our Tech Tips app is not meant for people like you. It's meant to be used by beginners in tech. So if you have parents or grandparents who are struggling with technology, or younger siblings who are just starting off with tech, let them use the app.

—Mithun

☒ The thought about "original thought" is among many of your and other's editorials and other standard article pages' content that intrigue me. In all of my consciously contemplated ideas, the ancient Indian schools of thought seem far advanced for today despite their timelessness. Since I'm keen on practical philosophy and have found that ancient Indian thought schools contain lots of pragmatism inherently, here's what I think about thoughts – original or otherwise.

My philosophical exposure points at two things about thoughts. Firstly, there won't ever be any dearth for new or unconventional thoughts. Secondly, none of it will ever be possibly original – as in belonging to the thinker who thinks of them first. But these seemingly paradoxical points aren't really contradictory.

To see this, one would have to contemplate on their perceptions of the model for life on Earth and the world of humans deeply enough with purely philosophical bent of mind. A mind that tries to adequately reason and believe, as necessary, when observing key aspects of the problem in gedanken mode to decipher the unseen order in the chaos apparently inherent in the topic of contemplation.

Apologies for the long sentences. But, if we could strike meaningful conversations around this topic, it could turn out to be an excursion in learning from each other.

—Narayanan R

4 Hi Narayanan, you've presented quite an interesting philosophical take on the subject of my editorial, especially from the perspective of the Indian mysticism or philosophy. However I don't find your two ideas contradictory at all. And I don't even need to enter a gedanken state,

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<http://dgit.in/H2drones>



Balloon popper!

India might pose a huge hurdle for Google's Project Loon
<http://dgit.in/PopLoon>

because unconventional thought is far different from original thought. Lastly, it's only through meaningful conversation (sometimes even with one's own self) that we reach higher consciousness. To that end, do keep in touch and let's continue this conversation!

–Siddharth

✉ I'm your fan and I love Digit magazine. The DVDs including the 14 years of PDF archives and new game trailers were marvelous. I know that the amount I could admire you in my entire life is much less than you deserve. The mags were perfect as usual.

–Sandeep Kapoor

4 Thanks for your feedback.

–Siddharth

✉ I'm a great fan of your magazine. I really like the article "Career in VFX". I'm impressed knowing that the VFX industry is getting bigger by the day. I'll be very grateful if you posted an article about 2D Animation in India. It will be useful to me since I belong to the animation industry. dmystify is awesome.

–Gyanmaya Acharya

4 Thanks for appreciating my article. We'll discuss the possibility of writing an article on 2D Animation. Do keep your eyes peeled for it.

–Infancia

✉ Greetings to a fabulous team that makes people more tech savvy. You do awesome work for which I don't even have words to appreciate you. These are some points I'd like to share with you:

1. The way you write articles is awesome.
2. Include the cash on delivery option for the mag.
3. Each time I get my magazine I always see that free DVD thing, but actually those are not free.
4. Please bring back two DVDs.
5. Only due to you guys I've cleared my National Cyber Olympiad with an international rank of 43.
6. Many students are not aware about your magazine and I find it very concerning.

–Sagar Nebra

4 Thank you for your feedback. We will certainly try and implement your suggestions. As for the "free" DVDs, of course they cost us money to make, but we give them for "free", as it is illegal to "sell" DVDs that consists of software created by others.

–Robert

✉ This is not my first email to you guys, but this will be a lengthy one. It took me six months to gather courage to write this email. So here it goes.

1. Feedback: I love the editorial section, all the articles written by The Big 3 (Sid, Jayesh, and Robert), the way you guys think, your thought process and views, they are really amazing. Do keep writing :).
2. Improvements: To be blunt I don't like your website, I just visit it once a month to see if anything has improved. The problem with the website is not the content that you guys published, but the way whole website and the content has been arranged. One more thing I find irritating is the slideshow section, as there is no way to know when a slideshow has ended. Also, does anyone of you answer the Ask Digit section?

I don't like your YouTube channel. You can improve the video reviews. For example: the recent video of Moto G turbo edition review by Hardik, you could have included gaming performance and camera image samples. Then the Apple iPhone 6s indepth review was 22 minutes long! They shouldn't be more than 10 minutes long. In the Micromax LapTab review, the background noise was an irritation. And the last thing, in the Zero1 awards you guys missed out on advanced point and shoot cameras, mirrorless cameras, earphones and headphones.

3. Suggestion: Can you guys include a short profile pic in the magazine of the writers above the article? Is there a

way that you guys can provide a digital copy of the mag including the fast track and content of the DVD?

–Ammar Timwala

4 Thank you for your honest feedback Ammar, and you (or other readers) should never need courage to write feedback to us. Listening to criticism from those who love you is the only way to really improve in life, and we are glad you consider yourself part of our family.

We are already working on a re-design, and much of what you've mentioned about the site, magazine, DVDs, and more is already underway.

–Robert

✉ I'm from Jharkhand. My friend once brought Digit to our school, and when I read it I bought it from him! Now I read it every month. Your dmystify is very nice, and thank whoever had the idea for it. Don't decrease the number of DVDs. I specially like Digit Squad. Please increase the number of pages of SKOAR!

–Anku Burmwal

4 Thank you for your wonderful feedback Anku. We will try and implement all of your suggestions .

–Robert

✉ I am a 22 year old Software Engineer and a digit subscriber in Chennai. I saw your December issue delay mail when I was on the way back to my hometown because of the Chennai floods. It made me happy, because although I was missing the issue, I at least got access to the digital copy :D I have a few suggestions for you including creating podcasts, book reviews, FT on travel tech guide, story on audiobook services, a video series on Indian startups and the science of rain.

Keep up the good work Team Digit. You rock as always.

–Arun Ponnusamy

4 We know what you've been through. We're in Mumbai remember? We have our own floods every monsoon to deal with. We will try and implement all of your suggestions.

–Siddharth

GREED

For those who just want more than should be humanly allowed, we have enough to satisfy your hunger...

THIS MONTH: Nike Zoom Structure 19, Steelcase Think Chair, Exospace B55, Sonorus VIII and X, and more...

TEMPTATION

If you're wondering what to do with yourself or how to spend some time getting cultured, this section is for you...

THIS MONTH: Jessica Jones, The Man in the High Castle, and uber productivity apps to ring in the New Year...

DESIRE > SHOWCASE

Epson PaperLab

Unlock hipster cred for office owners

We confess that we don't come anywhere near the most hard-working asset in our office and that someone is our trustworthy printer. Since we can't find any other use of all the printed pages, we send them off for recycling or shred them directly. But wouldn't it be great if we could recycle and reuse the wasted paper over and over again without the intervention of an outsider? Enter the PaperLab, an in-office paper recycling system which is probably the world's first. Manufactured by Epson, it follows the same system of recycling paper but apparently uses less water. The system will be able to consume all your wasted paper and give you back plain white sheets of paper, ready to be printed



upon. You wouldn't have to wait much since it only takes about three minutes to be ready to print clean white sheets. To try and put the process into perspective, the system will be able to print 14 A4 sheets every minute while users will have complete control over

the size and thickness of the paper. The PaperLab is set to make its debut sometime this year in Japan. There isn't any official word on the pricing yet but it's obvious to sell at quite an expensive price. Finally, your lonely printer will finally have a partner in crime.

Smart Battery Case

Say hello to Apple's new battery case which gives your sweet looking iPhone 6 or 6s, an unfavourable and ugly bump at the back. But if you're a fanboy, you would want to overlook this fact and focus on the extra juice it offers, doubling as a case as well. Claimed to boost up your phone to work for an additional 25 hours, the smart battery case will be available in two colours at a price of approximately ₹6,000.

Netflix Socks



Some TV shows make you reconsider Netflix and chill to watch the complete season instead. Netflix Socks will pause streaming if it detects when you've fallen asleep so you don't miss anything.

Coravin System



Wine connoisseurs are quite fussy in opening wine bottles due to the hindrance in its aging process. The Coravin System inserts a hollow needle through the cork to maintain its pristine condition.

Zenmuse XT



Drones are cool. Drones with thermal cameras are cooler. The Zenmuse XT camera module powered by FLIR takes advantage of DJI's gimbal setup enabling drones to conduct aerial thermal imaging analysis and reports.

Avegant Glyph



The Glyph is not a VR headset but more of a personal theater headset, giving you the illusion of a 65-inch screen. After a successful Kickstarter campaign, they have begun shipping with 10,000 units.



Scarlet-W

Red cameras aren't your regular cameras that you would pick to shoot YouTube videos (apart from a few crazy ones) since it's akin to overdosing on an overkill. But in case you were planning on filming a new spin-off from the LOTR series, please be our guest since the Scarlet-W and Scarlet-W Monochrome have become cheaper. Both the cameras are capable of shooting super crispy 5K RAW video and 2K ProRes video, thanks to the company's iconic Dragon sensor. The hyper-charged camera can capture 5K widescreen videos in 60 fps, 4K in 150 fps and 2K in 300 fps. The Scarlet-W isn't Red's flagship camera and it is actually intended more towards indie filmmakers as their primary camera. Priced at about ₹6.6 lakhs, the 1.6 kg camera will let you shoot cinema-quality videos. The Red cameras have Peter Jackson's seal of approval on them and hence, great things can be expected from the ones wielding the cameras in their films.

SPECIFICATIONS

Sensor type: Red Dragon 13.8 MP CMOS | **Effective Pixels:** 5120 x 2700 | **Body:** Aluminium alloy | **Weight:** 1.6 kg | **Dynamic Range:** 1.6 +/- stops | **Signal-to-noise ratio:** 80 dB

ET Stone

Products harbouring renewable sources of energy in devices are rare and so are power outlets. And considering the limited battery capacity of our devices, you are bound to carry a portable power bank who themselves have a limited capacity. Solar-powered power banks have been hitting crowdfunding platforms lately, successful ones such as Solar Paper and now, ET Stone is another such device we received at our test labs. Covered with solar cells on one side, the device takes more than half a day to fully charge using a natural or artificial source of light. The Stone also has an LED lamp and torch, bright enough to induce temporary blindness. It also comes with an additional car and tripod mount. The enclosure doesn't seem to be rigid enough to avoid damage and the material also feels low quality. Nonetheless, the Stone definitely serves its purpose of being an unlimited source of juice for your electronic gadgets whenever the Sun decides to be at its most generous. Not bad at ₹3,999.

SPECIFICATIONS

Battery capacity: 3,100mAh | **Input current:** 2A | **Output current:** 1.5A | **Solar panel:** 2.75V / 550mA | **Dimensions:** 84mm x 135mm x 16.8mm



Metropolitan+

In an era dominated by fancy, hipster digital smartwatches, Timex is trying to turn back time by going back to the good ol' days with its new analog watch called the Metropolitan+. Broadly, this time piece looks like any other watch but it deceptively hides activity tracking sensors under the hood. This certainly isn't a smartwatch but it isn't just an activity tracker. The watch only tracks your steps, distance and calories burned, sending all the data to your phone through Bluetooth. The Timex app enables you to analyse all the data tracked from the watch. The watch claims that you won't need to charge the device ever but don't expect the battery life to exceed a year. No word on pricing yet.

SPECIFICATIONS

Case Height: 12 mm | **Case Lug Width:** 20 mm | **Case Material:** Brass | **Case Width:** 42mm | **Warranty:** 1 Year Limited | **Water Resist:** 50 meters | **Attachment Material:** Silicone

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LIC/02/14-15/05/ENG

EL-8 Titanium

Apple's decision to replace all the ports on the Macbook with a single USB Type-C port managed to piss off a lot of people and surprisingly even the fanboys weren't impressed with this move. Rumours has it that they might even get rid of the 3.5mm headphone jack on the iPhone and push the efforts to build audio products incorporating lighting connectors. Not the first but Audeze seems to be quite positive with this advancement and has released a new headphone called the EL-8 Titanium that connects to iOS devices using the lighting port. The headphone comes packed with a digital signal processor, digital-to-audio converter and an in-built amplifier. The company is known to manufacture high-quality and expensive headphones but since the EL-8 series falls under the affordable range, it is priced at around ₹53,000. The headphone as usual follows the same remarkable design and this one is a closed-back version. The mic enables you to control your iOS device through Siri and Audeze also lets you download its own app which bundles an equaliser and sound presets. Non-iOS users can still consider purchasing since it ships with a 3.5mm connector cable with the box.



SPECIFICATIONS

Driver Size: 100 mm | **Maximum power handling:** 15W (for 200ms) | **Maximum SPL:** >130dB | **Frequency response:** 10 Hz – 50 kHz | **Impedance:** 30 ohms | **Optimal power requirement:** 200mW – 4W



TMA-2

The concept of modular devices is penetrating into almost every gadget segment and this time it's headphones. With AIAIAI's new headphone called the TMA-2, you'll be able to pick almost all the broader components of the headphone including the head-band, speaker unit, earbud and cable. Their website has an easy-to-use interface to configure your custom headphone with several options to choose among the components. The options aren't exactly too many but considering their idea, there's definitely space for addition of new components. The Configurator section allows you to browse through the different components and the respective options. You should be careful since changing the speaker units and earbuds affect the sound profile of the headphone. We assembled two iterations of the headphones and came up with models costing between ₹16,000 to ₹18,000.

SPECIFICATIONS

Driver size: 40 mm | **Resonance frequency:** 85 Hz | **Impedance:** 32 ohm | **Magnet:** Neodymium | **Diaphragm:** PET | **Weight:** 233 g

DESIRE

TAKE MY MONEY!

Here is where we keep an eye on crowd funded projects that will make you go 'Shut up and take my money!'



OP - Beer Gadget

Do you like to drink beer? But once you've had a few, you might end up being gravitationally challenged or simply lose your hand-eye coordination. Worry not, here's a handy gadget that you'd want around. OP is designed to ease your beer carrying problems. There are basically three pieces in this gadget : one belt attachment, one bottle attachment and to add its magnificence it even has a bottle opener included. The original idea of the product was woven around beer, but Op has expanded its product idea to include other beverages in various

packagings, like cans by providing the bottle attachments of different sizes, to accommodate the non-drinking community. But, beware to not take it lightly on account of its size, because this tiny thing has the resilience to even carry Thor's hammer. This little add-on for lifestyle is available for just ₹583. One of the few time OP did not disappoint.

Cast by Genii

Remember that irritating friend who always interjects while a video is playing? He might have been irritating but you sure do miss him when he isn't around. With this nifty gadget, it'll be as if he never left the room. Using Cast by Genii, you can stream the video to your friend(s)'s PC/laptop at the exact time stamp and also chat during playback on the same display. The playback should be seamless, regards to its Intel SoC and two separate Wi-Fi antennas. The app works on iOS 8.0 devices and above, and the same can be said for devices running Android 4.4 and above. It is



a community viewing hub designed to stream content from a mobile device onto to a display or to be forwarded to a friend. The little igloo shaped

gadget is compact and has a glossy finish. The good thing about Cast is that you just need one hub to cast content up to 6 devices and location isn't a barrier. What's even better is that you can stream content from services like Netflix and Hulu or from consoles like PlayStation and Xbox. Apparently, there's a legal loophole.

SPECIFICATIONS

Cast Box: Dimensions: 7.5 X 15 cms | **Intel SoC** | **2 Wi-Fi antennas** (with n/ac and b/g/n/ac bands)

Cast Cam: Height - 11.5 cms |

Connectivity: WiFi g/n | **Video Recording** - 30 fps | **Encoding:** H.264 | **Microphone and speaker** (in-built)

Cast Stick: Connectivity: HDMI and Wi-Fi n/ac | **Playback support:** 1080p60 and 720p60.

ShiftWear

There are some devices that just beg to take your money. These sneakers are definitely one of them. So, what's so great about these pair of sneakers? They've got flexible screens on the sides! Using the app, you can customise your daily look to match your phone wallpaper, your pants or even your tattoo... if you're into that. The e-paper display is waterproof and the



soles are made of Kevlar which makes them perfectly washable. The shoes are available in three variants – L1 (low ankle), M1 (medium ankle) and H1 (high ankle) available for \$150, \$250 and \$350 respectively. Add in an extra \$50 for shipping it to straight to your doorstep. And customers might find it irksome when faced with dropping the extra \$99 for the app.

Pine A64

There've been plenty of credit card-sized computers over the past few years ever since Raspberry Pi popularised the genre. And now, there's a new kid on the block. Meet the Pine A64. It gives the Pi a run for its money. For \$15, you get the Pine A64 which has a much powerful SoC with 64-bit 1.2 Ghz Quad Core Cortex A53 CPU and Mali 400 MP2 GPU. And with 512 MB RAM you can play 4K H.265 videos. For four extra dollars, you get the Pine A64+ with double the RAM and a gigabit ethernet port against the 10/100 MBps port on the Pine A64. It supports Android 5.1 and Ubuntu OS.

SPECIFICATIONS

Pine A64: **Processor:** Cortex A53 64-bit 1.2GHz; Cores-4 | **GPU:** Mali400-MP2, 512MB DDR3 | **Flash:** Upto 256GB; 10/100 MBps Ethernet

Pine A64+: **Processor:** Cortex A53 64-bit 1.2GHz, Cores-4 | **GPU:** Mali400-MP2, 1GB DDR3 | **Flash:** Upto 256GB; Gigabit Ethernet



CarDroid

When you think of vehicle security, you're instantly reminded of those irritating systems that blare incessantly and have hardly any extra features. The expensive units might have built-in GPS but that's about it. Unless of course you're willing to sell your kidney to get Jarvis. Here's the first ever Android based car security device – the CarDroid. Aside from making your car "smart" it even has a built-in accelerometer. If you ever end up in an accident, your car's movements are recorded so you have something that's akin to a black box for cars.

SPECIFICATIONS

Dimensions: 4.9 X 7.5 X 2.9 cms | **Processor:** MediaTek MT6572 Dual-Core 1.2 GHz | **RAM:** 512 MB | **ROM:** 4 GB | **Connectivity:** OBD II, Wi-Fi, GPS, WPS, A-GPS, Bluetooth 4.0, 3G, GPRS, EDGE | **OS:** Android 4.4 and above | **Battery:** 1400 mAh.



Clicker-Rang

Imagine you are surrounded by people who are boring you out of your mind. Can you send an SOS! to protect you from these people without really letting them know? If you've been in this situation then keep this tiny wearable handy. It can be a bracelet, necklace, keychain or your good old watch. It allows some basic functions like SOS, messenger notifications and finding phone. However, to use these functions you just have to customize the dial interface sections via its app. There is even a built-in game in the app playable by using gestures on Rang for keeping you occupied. So at a price of US \$39, it sure looks like an expensive piece of jewellery, but really isn't. It may come to your rescue when boredom is overbearingly strenuous!

DESIRE

MOBILE WATCH

Stylish, glamorous and interesting smartphones are always on the horizon. We take a closer look at what's hot in this space...

Kyocera Digno Rafre

There is no situation where you should feel the need to wash your phone, but in case you are a germaphobe or work in such an environment, there is a phone for you. The Kyocera Digno Rafre is a phone that is currently available only in Japan, which can be washed with foam soap all over. So, if your kid is prone to dropping the phone in food and debris, you won't have a problem washing it off with soap. Phones which are washable with soap are rare, as the seal on these phones should be tight enough to prevent soap water from seeping in, which has a lower surface tension than water. Normal seals used in waterproof phones will not hold up, and you'll end up getting your phone waterlogged. Kyocera has no plans to market this \$460 phone outside Japan.



SPECIFICATIONS

Display: 5", 1280x720 | **Battery:** 3000mAh | **Camera:** 13MP rear, front unknown | **Software:** Android 5.1

Oukitel K10000

Have you ever looked at your smartphone's pathetic battery and wondered why battery tech isn't moving as fast as it should? This Chinese company crammed a giant battery into a phone, rather than improving the density of the battery. In a blog post by the company itself, Oukitel has 'leaked' images and specifications of its upcoming phone, which is set to sport a 10,000 mAh. To put things in perspective, the iPad Pro sports a battery capacity of 10,307 mAh, which is one of the largest batteries crammed in a tablet. The K10000 promises a battery life of 15 days, without needing to charge the phone. The specs aren't even 2014 standards by any means. From the images leaked by the company, the phone seemed to sport a micro USB port, flanked by dual speaker grills on either side.

The body might be a strong polycarbonate blend, with metal along the edges. GearBest has the phone listed for \$239, shipping from Jan 30th, 2016. You can find the blog post here [<http://dgit.in/K10000leak>] and the listing here [<http://dgit.in/K10kblog>].



SPECIFICATIONS

Display: 5.5" at 1280x720 | **Processor:** 64 bit MediaTek MT6735 clocked at 1GHz | **Memory:** 2GB RAM + 16GB ROM | **Camera:** 8MP (S13MP) back + 2MP (S5MP) front | **Battery:** 10000mAh, Flash Charging at 9V/3A | **Connectivity:** Bluetooth 4.0, GPS, USB OTG, 2G: GSM 850/900/1800/1900MHz, 3G: WCDMA 1900/2100MHz, 4G: FDD-LTE 800/1800/2100/2600MHz | **SIM:** Dual SIM, Dual standby, 1MicroSD+1SIM



SyncPhone

The Sync Phone promises to put a phone in your hands, which can also function as a desktop when needed, by using just a cable. The campaign currently has 3 models listed, the SyncPhone, SyncPhone S and the SyncPhone Pro with desktop class hardware. The phones run on the Intel Atom variants of x5 and x7. If the campaign meets a few goals, it promises triple boot capabilities of Android, Windows 10 and Ubuntu. Go here: <http://dgit.in/Syncphone>

SPECIFICATIONS

Processor: Intel® Atom™ x7-Z8700 2.40Ghz | **Memory:** 8GB RAM, 128GB ROM expandable via MicroSD | **Camera:** 20MP | **OS:** Windows 10 | **Display:** 5.4" | **Connectivity:** Dual-LTE-GSM, WiFi, Bluetooth, USB 3.1, Type-C

EXAMINED

What do we do to really cool products that come to the Digit Test Centre for which we can't really write an in-depth review? We examine their pros and cons here and give you a quick rundown on what makes them tick.



Nike Zoom Structure 19

Fitness for the geeks

Whether it was the famous Air series or the Flyknit Lunars, we've long been fans of Nike shoes. So when they decided to send us a pair of their latest running shoes, the Nike Zoom Structure 19, we decided to get on to the fitness bandwagon in complete geek fashion. Out came the wireless Jaybird X2, the Fitbit Charge and a quick order was placed for a smartphone armband. Armed to the hilt with tech, we hit the track with much enthusiasm

and the Zoom Structure 19 did not disappoint. It's Dynamic Fit technology manages to stabilise the foot quite well while leaning into each step. The cushioning absorbs impact fairly well while the Flymesh body lets the shoe breathe. The Flywire cables on the side make for a snug fit; in fact a little too snug initially one might notice. The highly contoured arch support does take a bit of getting used to especially while walking, but when running it does help. If there's a shoe that gets lazy geeks off their behinds and out onto the road it's the Structure 19. If the colours seems a little over the top, don't worry they come in black as well. It doesn't come cheap and buying a pair will set you back by ₹11,795.

Steelcase Think Chair

For people who spend half their lives on a chair

Your bottoms demand attention when it comes to the comfort of sitting on a chair. You must be spending most of the day at office and if working long hours is a thing which is quite common back at our labs, you deserve an ergonomic chair. We were delivered the Steelcase Think Chair and we didn't waste a single moment to open it up. The excitement led us to assembling the chair in under 15 minutes. We received the 3D Knit Back variant that sports a mesh back which adapts according to the position of your back against the chair. The adjustable lumbar support can be raised or lowered, making it more comfortable for your spine, neck



and shoulders. A dial placed below the seat lets you control the angle of recline for the back across four actuation points. Since our hands and arms aren't of the same shape, the armrest has been made adjustable according to height, width, pivot and depth which is a boon if you shift between typing and simply relaxing on the chair. The wheels on the chair are quite smooth to push on the floor, so smooth that we are even considering in turning it into a temporary video dolly setup. Steelcase has built a really comfortable chair and we have spent sitting hundreds of hours on it. In fact, this entire section has been written while seated on the Think Chair.

DigiTech TRIO Band Creator

A lonely guitarist's pal

With so much going on in life these days, it's not really possible for musicians to find time everyday to get together and jam. What this usually means as a guitarist is that you end up playing alone with no backing music, or you play to the same old static backing tracks that you have. DigiTech made the TRIO Band Creator exactly for the scenario we've just painted. A small pedal that can essentially give you the feel of having a drummer and a bassist to jam with. It tries to give you that feeling of jamming alone but having background sound at the same time to give you an illusion of musical grandeur

At first, it takes a little time to get used to the TRIO, but unlike us, if you watch the many YouTube videos featuring the TRIO before you begin using it, it will save you a lot of trouble. So yes, trial and error is good, but sometimes it's just easier to check out YouTube for helpful tutorials and videos of people who've actually used this product and other similar contraptions. Learn from their story, it will only help.

With 7 genres, 12 styles per genre, 3 parts recordable and tempo control to boot, the TRIO is really quite versatile, and to be honest, this writer isn't a good enough guitarist to really exploit its true potential. It certainly helps to know all seven genres available – Blues, Pop, Alternative, Rock, Country, R&b and Jazz. It also helps to simplify the rhythm you play in order to train the drums and bass – we tried to play complex riffs at first to train it and it was too confused to playback anything melodious. Play simple chords in as simplified a strumming method as possible for the riff you want, and it can really help you make interesting music. Using the three recordable parts, you can record a verse, bridge and chorus for the song, and switch between them while playing by holding down the main switch with your foot.



We could write an in-depth review of the TRIO, but there isn't enough space here for that. The bottom line is, if you find yourself playing guitar alone more often than you'd like, you need to save up and buy one of these. It's like having drummer and bassist pals, who are instantly on the same wavelength as you, allow you hone your riffing skills and let you experiment across the musical genres as well. What's more, you get all of this without having to tolerate any of the extra baggage that comes along with band mates.



SEIKO Velatura

Flick of da wrist

Batteries might be getting smaller and more efficient but there's a new wave of watches that have done away with it altogether... well almost. The SEIKO Velatura is an amalgamation of technology and class, and is relatable for the masses. You'd think kinetically powered watches might have a nasty whirring noise but there's none of that with the Velatura unless you call yourself an audiophile. Because then you're just nitpicking.

The SEIKO Velatura does have a small battery and circuitry to store time for its power save function. Being idle for 24 hours causes the watch to enter this mode and bring all mechanical operations to a halt. Moreover, it retains its charge for four years. So you can strap it on anytime and bring it to life with a flick of your wrist.

GREED

DROOL MAAL

Get your drool on and behold some of the fanciest, ostentatious and drop dead gorgeous gadgets money can buy. Droolworthy?



Exospace B55

Analog watches are making a comeback in the riddled world of smartwatches and it's better to let the Swiss do what they do best. Coming from luxury watchmaker Breitling, rather than stuffing the watch with a horde of sensors they have kept everything analog except two LCD screens on the watch face. This particular timepiece is directed towards pilots and the ones who believe they can fly. Anyone would wonder what a watch made specifically for pilots could do and the answer isn't complicated. The watch consists of a few flight time functions, letting the pilot monitor 'block' times, the time taken between takeoff and landing, and also lets them measure the speeds for a given distance. Additionally, the watch also connects to a phone and displays notifications for email, text messages, phone calls etc. The

Exospace B55 has a 46mm watch face made of sapphire crystal with glare-proof coating on both sides, at a thickness of 15.25mm. It has a black titanium case and is water resistant up to 100m, a feature no pilot would want to test out. The watch works on SuperQuartz movement, expected to run for around two months. Given all the features listed above and the meticulous craftsmanship spent on this elegant timepiece, it surely won't be cheap.

Sonorous VIII and X

Planning to shoot your next pop music video? Because we have the perfect pair of headphones for you to showcase. Step aside Beats, Final is the new player with the bling. Why you wonder? Well, simply put, the Sonorous VIII and X have 24k gold plating and accents around the earcup rims. Now, anything covered with gold might remind you of a wealthy Saudi Arabian prince but this product isn't just about the exterior. Inside, the 50mm drivers have been integrated with titanium



diaphragms, a standard that will ensure the production of crispy sound. Both the models are similar in almost all the aspects, the interiors being the exact replica. The only difference

between the VIII and X are the earcups where the X is completely made of metal. Due to a metal body, the X weighs in higher at 630g while the VIII weighs in at 490g. Both have an impedance of 16 ohm and the company claims that these headphones have been hand-made. All this bling clearly has

to be expensive. So, brace yourselves, the Sonorous VIII is priced at around ₹2.2 lakhs whereas the Sonorous X is priced at around ₹3.5 lakhs. Our best wishes for that music video.

The Wu - Once Upon A Time in Shaolin

If you think you are possibly the biggest hip-hop fan, think again. The Wu-Tang Clan, one of the greatest Hip-Hop group, has made just one copy of their album, The Wu-Once Upon A Time in Shaolin. Once Upon A Time in Shaolin, cannot be commercially exploited until 2103, although it can be released for free and for



listening at parties before that. The album was released in 2014, and was destined to tour museums, art galleries and such, before being auctioned off. Martin Shkreli, the former CEO of Turing Pharmaceuticals, bought

the album for \$2 million. Yep, that is how much the only copy of the album sold for, and that is the amount one has to shell out to disappoint millions of hip-hop fans all around the world, who were keen on finally listening to the album. After the FBI arrested Martin Shkreli on charges of securities fraud, the FBI got a lot of queries asking for the album. Martin had to pay \$5 million as bail. If you're one of the lucky ones who has that kind of money and wants to get the album out of the wrong hands, you should consider buying the most valuable album of all time.

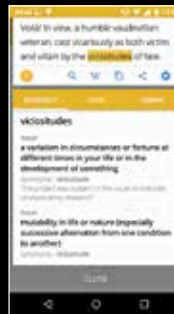
Couach 5000 FLY

A regular reader of this section will agree that we love to cover superyachts because nothing reeks of luxury than an expensive yacht. And this month, we came across the Couach 5000 FLY, a luxury marvel from France. The yacht has a total area of 500 square metres and a unique composite hull made of Kevlar. It isn't exactly clear on the decision of the material for the hull but we are ready to believe that it offers a high degree of rigidity and lower weight and not protection against bullets. The top of the deck has a huge area which can potentially be turned into a helipad in case you feel like travelling with your helicopter for your vacation trips. The yacht has room for 12 guests and 10 crew members, and of course, an array of luxury and entertainment facilities, including a Jacuzzi. Capable of reaching a top speed of 30 knots and cruise at 24 knots, the 5000 FLY will be able to cover a distance of more than 5000 km range on a full tank. This would mean that the yacht will be able to cross the Atlantic Ocean in just 10 days. The price on this masterpiece isn't available, giving us enough time to start saving.



APP WATCH

Define



Kindle users will know how useful it is to simply tap on a word for its meaning and definitions, something which is already present in iOS but still yet to enter Android. With Define, you get the similar functionality of getting the meaning of a word with a few taps. All you need to do is long press on a word and copy the text which invokes a notification to browse the meaning of the word. Of course, you can select whether you want a notification or directly show the meaning.

You get options to either download two offline dictionaries like Livio and Wordnet or you can refer to the online Urban Dictionary. This feature only works in applications where you have the functionality to copy the text.

Play Store: <http://dgit.in/DefineAnd>

Mirrativ



Watching game broadcasts is fun. Whether Twitch or YouTube, sometimes it serves as a guides to beginners or techniques for the viewers to improve in the game. Currently, game broadcasts are restricted only to PC and console games, and until we actually get to experience YouTube Gaming's upcoming broadcast feature, we fall short on options for mobile games.

Mirrativ is a screen broadcasting mobile application available in Android that lets you broadcast your device's screen over to the Internet for anyone with the link to watch. To put it into an easier perspective, think like Periscope for mobile screen sharing since most of the features are similar to live broadcasting apps except the video feed is the device's screen.

Play Store: <http://dgit.in/Mirrativ>

Pintasking



If you're an ardent desktop user, your fingers will definitely be accustomed to the alt+tab command to switch between windows. One of Pintasking's feature tries to emulate the same function on an Android phone for power users. The basic idea here is to pin or overlay an app icon on your phone's screen while switching to another app. Then you will be able to tap on the pinned icon to open the app in the state you had left. This is similar

to pressing the home or multi-tasking button and then opening up another app but now it's reduced to a single step. There are much more features available in the app, perfect for power users.

Play Store: <http://dgit.in/Pintasking>

TEMPTATION

CRITIQUE

In this section, we put stuff through the grinder and closely examine what comes out; everything except gadgets, because there's more to life than just that

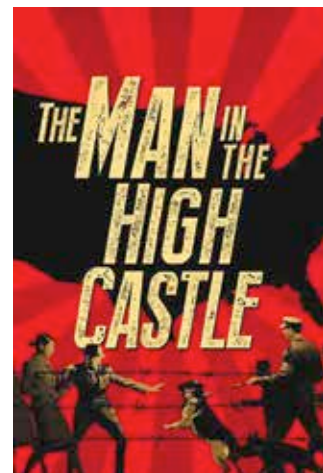
TV SHOW

The Man in the High Castle

Had the tables been turned

If we are to limit ourselves to the fictional world, then the contributions of Indiana Jones and Captain America is what kept the Nazis at bay. Jokes aside, World War II was truly the race for the atomic bomb. And *The Man in the High Castle* explores a world had the Nazi's been the first to drop the atomic bomb. They did and they won, the world was brought to its knees and life carried on as it always has, except for a few glaring differences – at least that's the premise of this scintillating book.

Huge portions of America were captured by allied powers. Going by how history is written by the victors, the allies that we refer to here are the Japanese and the Germans, obviously. The entire Pacific coast is under Japanese occupation and the entire eastern coast along with a huge portion of the central United States have been brought under Germany's Great Third Reich. Both occupations, separated, by a narrow neutral zone. Ring any bells? East and West Germany, anyone?



Adopted from a 1962 novel of the same name by Philip K. Dick, the series starts off at a proper pace which might seem a bit slow at first given that character development and other movie devices take time to come together. But we recommend sticking with it for a while, as the experience is pretty darn rewarding. Going by what we've seen so far, the series seems likely to break out into a Colder War between the American resistance against its oppressors which might truly be a proxy for a bigger battle between the once great allies.

Rating: ★★★★★

–Mithun Mohandas

TV SHOW

Jessica Jones

Pleasant surprise!

Marvel's Jessica Jones follows the life of Jessica Jones, played by Krysten Ritter, who is a private detective in Hell's Kitchen, after her career as a vigilante superhero took a tragic turn. Jessica is a gifted individual and often takes clients who are gifted like her. Using her unconventional methods of investigation, she helps anyone who'll cut her a pay-check. The series manages to revolve around Jessica, despite the several sub-plots, which often go off-track. The series has been widely acclaimed for its portrayal of dark topics such as rape, sexual assault and PTSD, which are often neglected in the MCU. Krysten Ritter delivers one



of her best performances. The series one of the very few shows, which dares to diverge from TV stereotypes. If you liked Marvel's Daredevil, you will enjoy this one. Must watch for Marvel fans.

Rating: ★★★★★

– Abhishek Balaji



Rush Hour
Detective Carter and Detective Lee, from the famous movie franchise of the same name, are back with a reboot to once again make you laugh your lungs out. We do hope for Jackie Chan and Chris Tucker cameo.



Billions
Billionaires are untouchable! Or is it so? US attorney Chuck Rhoades seems to disagree as he sets out to uncover the underhanded dealings of hedge fund king, Bobby 'Axe' Axelrod. Who's going to win this blitz? Take a guess.



Making a Murderer
It isn't a surprise if the innocent are convicted for heinous crimes. The same is the case with Steven Avery. See how the rich and influential oppress the weak and what happens if the weak retaliate in this real life adaptation.

TEMPTATION

TTD

Bored out of your wits? Can't think of any fun thing to do? Worry not, we'll take that burden off your shoulders in our Things To Do section every month. Read on!

A productive new year

"Concentrate all your thoughts upon the work in hand. The Sun's rays do not burn until brought to a focus" - Alexander Graham Bell

It's 2016 and your social media feeds must be flooded with 'new year, new me' cringe-worthy posts. Either you will make resolutions for the rest of the year and religiously try to accomplish them, or breeze away just like you have been for the previous years. If you're of the former kind, then fear not, we have compiled a list of apps and services you should definitely adopt into your daily lives in order to have a productive year ahead.



Wunderlist:

The first step to be productive is to plan out all your tasks using to-do lists and reminders bound within deadlines. A bunch of apps offer this functionality and among them, we would recommend Wunderlist. The reason to opt for Wunderlist is the simple and beautiful design, yet delivering a platform wide app with useful features to make to-do lists and reminders.

App Store: <http://dgit.in/WunderlistiOS>

Play Store: <http://dgit.in/WunderlistAnd>



Google Keep:

Simple is better. Google Keep certainly reassures us the previous statement by being a simple tool to create notes and checklists in a simple way, implementing only useful features. You can even doodle and attach images to your notes, colour code each code and all your saved notes will be synced to your Google account.

App Store: <http://dgit.in/KeepiOS>

Play Store: <http://dgit.in/KeepAnd>



Slack:

If you're vying for productivity, you need to consider using a robust communication medium. You can try but IM services don't give you enhanced features to supercharge your conversations. Slack combines a plethora of plugins and modules, ensuring that you almost stop using email to communicate with your team members. It's directed more towards a work environment but that doesn't mean you can't use it

with your friends. Go on, take a chance, give this collaborative communication app a much-needed try out.

App Store: <http://dgit.in/iOSSlack>

Play Store: <http://dgit.in/SlackAnd>



Sunrise:

Again, there are several calendar apps available on all the popular smartphone platforms. And for this category, our interest has shifted to Sunrise which essentially connects to Google Calendar, Microsoft Exchange and iCloud, and several other apps such as Facebook, Evernote, Wunderlist, etc., striving to be the best possible calendar / reminder app in existence. It combines all the listed reminders, birthdays and any form of events into one single place.

App Store: <http://dgit.in/iOSSunrise>

Play Store: <http://dgit.in/SunriseAnd>



Outlook:

With the launch of Outlook on both Android and iOS, Microsoft has delivered the best email client for mobile. It is a complete powerhouse which brings your contacts and calendars into a single seamless layout, making you accomplish everything within the app. It prioritises the most important emails based on your contacts and address book. It connects email accounts across Office 365, Gmail, Yahoo etc.

App Store: <http://dgit.in/MOutlookiOS>

Play Store: <http://dgit.in/OutlookAnd>



Evernote:

When productivity is the major concern we cannot miss out Evernote. It's one of the few apps which has a notification widget in iOS. You scan your documents, business cards and whiteboards and share it within the app with the new chat. Its task reminder is similar to the mainstream apps with alarms and all. If you're not feeling up for typing your tasks or notes,

just dictate. To get started, just create an account or sign-in with an existing one to sync your notes across devices. Happy note-taking!

App Store: <http://dgit.in/iOSEvernote>

Play Store: <http://dgit.in/AndEvernote>

Tech up your pet

Get control of all the discrepancies involved in taking care of a pet using the latest gadgets in the market

**Neyyapam? Nankhatai?**

Google may launch an online poll to name the next dose of sweet candy for Android! <http://dgit.in/NAndroid>

The internet's cream of the crop for 2016

Abhijit Dey

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While you start off the New Year with full vigour and enthusiasm, still recovering from last year's hangover, you must be looking forward to what 2016 has to offer. We believe that you derive happiness mostly from the internet so we set out to list the most informative, interesting websites on the internet. Searching every nook and cranny of the interwebs, an extensive sheet was prepared and only the best of the best made the cut for this list. It wasn't easy, but had to be done, because you deserve the best.

When it comes to consuming content from the internet, we at Digit brag about having high standards for our sources. Our preferences involve articles and videos which are well-researched, well-written with a dash of humour. The categories would essentially include science, technology, humour, DIY guides and absorbing videos. Of course, listing out every website we follow could take a separate issue altogether. However, we've still tried to give you a glimpse into what web destinations and people we follow in our daily lives. We highly recommend them to you. Let us know how it goes and whether they find a place on your list, too.

Best websites to visit

Product Hunt – A great place to discover a wide variety of products including soft-

ware, services, games, books, etc. If you're curious enough, you'll end up spending a lot of time here.

<https://www.product-hunt.com/>



We compiled a list of the best places to visit on the internet to keep you occupied throughout 2016. As a bonus, we've also recommended a few prominent people to follow. Click away!

The Oatmeal – A popular web comics on the internet, depicting everyday scenarios based on funny fictional characters, The Oatmeal has garnered a huge fan base. You can't ignore the comic strips uploaded here. <http://theoatmeal.com/>

The Onion – Not intended for the glib kind, The Onion is a news satire publication which reports on trending news, both real and fictional, ending up confusing the naive minds. Legend has it, they have a readership of 4.3 trillion.



<http://www.theonion.com/>

The Intercept – Snowden took the internet by storm after he revealed NSA's snooping techniques. The news broke out with the help of the co-founding editors of this publication and now they have devised a process for concerned citizens willing to leak similar scarring revelations to the public. <https://theintercept.com/>

Nerdophiles – If you're a nerd at heart and completely geek-out on content related to movies, TV shows, videogames, books etc., you should definitely follow this website regularly to stay updated on nerdy content. <http://www.nerdophiles.com/>

Upvoted – A lot of information is shared on Reddit and to take a step further with the content shared in this community, the company launched Upvoted to create original



content including editorial pieces, podcasts, videos and graphic art. You'll find trends from the frontpage of Reddit covered here.

<https://upvoted.com/>

xkcd – This is a series of stick-figure web comics covering subjects of technology, science, mathematics and relationships with a humorous spin to them. Even though the artist worked at NASA previously, you will manage to get all his jokes.

<http://xkcd.com/>

Instructables – If you were to imagine a website directed towards creators, Instructables is a manifest of your imagination. Discover thousands of projects across a number of platforms and



categories, and share your creations with the world.

<http://www.instructables.com/>

History Today – There are some people who love reading historical pieces about forgotten practices, wars, products and people. Such an interest can be fulfilled at History Today, especially in the Long Reads section. <http://www.historytoday.com/>

Popular Science – This website can be your daily dose of science through stories on recent trends, developments and news. Once you start reading it's really difficult to stop. <http://www.popsoci.com/>



Apple before Droids?

Ever wondered why the Apple App store has more apps than the Google Play Store?
<http://dgit.in/Droidb4iOS>



App Store ... App?

Microsoft released an app on the Play Store titled 'Microsoft Apps', which just lists their apps.
<http://dgit.in/MSappstore>

Geek life

PBS Frontline – Investigative journalism at its best, there's plenty of documentaries and short films on controversial topics presented with great detail and narration. Our lunch breaks usually are spent on this website.
<http://dgit.in/FrontlinePBS>



Best subreddits to subscribe

Popularly revered as the front page of the internet, Reddit has assembled a cult following across generations. We could have listed Reddit under the best websites section but it wouldn't have been fair since it's like a gateway to the best things happening on the internet. Dependent on user generated content, you'll come across everything, right from the funniest memes, GIFs, comments etc., to random acts of kindness, and not to forget the internet's favourite, cats. Once you join Reddit, you can subscribe to subreddits, a pseudonym for communities dedicated to specific topics. Subreddits witness interesting discussions and also friendly banter, with a different level of trolling, aided with contextual memes and reaction GIFs. You are free to choose from the following subreddits but if you want to be a better person, you seriously need to subscribe to all of them. When it comes to Reddit, our preferences are directed to funny GIFs, witty comments, mind-blowing realisations, etc. And to let you in on a secret, this is a list of our own subscriptions, apart from the inappropriate ones we can't mention here.

/r/IAmA – If not the best, this is among the most popular subreddit conducting interactive discussions with prominent members from the field such as actors, scientists, artists, etc. Users can directly ask questions, potentially invoking an interesting series of Q&A for you to read up.

/r/YouShouldKnow – Here you'll stumble upon really helpful tips and tricks, and simple workarounds to improve your skills and productivity on menial tasks.

/r/TodayILearned – This subreddit can be quite informative with users speaking about accidental discoveries of that-person-

TWEET PEEPS TO FOLLOW

Neil DeGrasse Tyson

[@neiltyson](https://twitter.com/neiltyson)

It would be a shame if you aren't aware who Neil Tyson is and if you aren't, follow him right now, for science.

Elon Musk

[@elonmusk](https://twitter.com/elonmusk)

Touted as the real-life Tony Stark, Musk is all set out to harvest solar energy on a massive scale and colonise Mars.

Robert Scoble

[@Scobleizer](https://twitter.com/Scobleizer)

Quite popular on the tech front, Robert is always on the lookout for the best innovations and technology around him.

Neil Gaiman

[@neilhimself](https://twitter.com/neilhimself)

There are several writers on Twitter but not all of them are as funny as Neil Gaiman. Follow him for witty replies.

Rob Delaney

[@robdelaney](https://twitter.com/robdelaney)

Thousands of comedians are present on Twitter but Rob's sense of humour and random mentions to people are funny.

in-that-movie or simply coming across obscure facts about things or people.

/r/dataisbeautiful/ – Another popular subreddit, here you'll find informative visualisations of data in the form of graphs, charts and maps, to display data in a easier and straightforward way.

/r/DIY – Personal projects by Redditors are explained meticulously with a step-by-step guide from scratch until the finished stage. The projects aren't just your regular household hacks but essentially expert level setups of furniture and crazy customisations in everyday objects.

/r/oddlysatisfying – For all the folks with a high sense of perfection, symmetry or a mild case of OCD for everything, this subreddit will give you a weird and odd satisfaction on every click.

/r/AskReddit – Reddit has a huge community and you are bound to get more than a hundred different answers for a single question. This subreddit gives you the same

opportunity to ask your heart out and in turn receive real and hilarious replies from your fellow Redditors.

/r/nosleep/ – A place for budding writers to pen down thrilling horror stories, this is hands-down our favourite subreddit at Digit, owing to the quality of the stories written. No one really knows whether the stories are true or not.

/r/ThingsCutInHalfPorn/ – Among the best recent discoveries on our side, expect images of cross-sections of various things such as guns, planes and even organs.

/r/photoshopbattles/ – If you consider yourself a Photoshop ninja, this subreddit is where you can test your skills. Or you could just scroll through all the posts and have short fits of laughter looking at funnily morphed images, face swaps etc.

/r/HybridAnimals/ – Have you ever seen a seahorse with the face of a T-rex? Or maybe a dog's face on a penguin's body? They were probably posted first on this subreddit before they went viral around the internet. You'll find other such face and body swaps of animals here.

/r/Showerthoughts/ – The shower is where the philosopher in you wakes up and comes up with daunting thoughts and ideas. Here, you'll come across never before thought of realisations.

/r/FanTheories/ – Remember reading about the theory about The Joker being the actual hero in The Dark Knight? It first appeared here along with several other theories across different franchises.

/r/simulated – Physics experiments on non-Newtonian fluids are pure pleasure to watch. This is where creators and enthusiasts post their computer animated simulations to satisfy your eyes.

/r/PerfectTiming – Well-timed shots manage to reveal something spectacular or something hilarious. The perfect timing when someone gets punched, the perfect timing when a bubble bursts, you'll find all such photos posted here. 📸



OnePlus X Champagne

OnePlus announced a Champagne version of the OnePlus X, the middle child in the lineup. <http://dgit.in/OPXChampagne>



Hover-man!

In a daring robbery, a man glides into a store on a hoverboard and steals a crate of drinks <http://dgit.in/HvrBrdTheft>

Tech up your pet

Do you have a dog who keeps wandering off? Or perhaps a cat that turns your house upside down when you are away? We have got you covered



Adamyia Sharma
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The best part about having pets is never having to feel lonely and making a friend for life. Be it a dog, a cat, a turtle, a bird or even a hamster, pets are a natural stress buster and mood lifter. You want to spend all your time cuddling and coddling your little munchkins and even while you are away, they have you worried and concerned for their safety and well-being. You never 'get' or 'buy' a pet, you 'have' them, just like children.

Now's your chance to do a little something for your little critters. The way technology has improved your life all this while, it can vastly enrich your pet's day-to-day existence too. If you can have a cell phone, so can your pets. If you can have geeky toys, so can your little trotter. If you can have a GPS tracker, so can your precious animals. Time and technology have changed the way we interact with our pets, and today, there are countless solutions to solve your and your pet's peeves. So, here's

a list of all things tech that you and your furry friend can enjoy together.

Garmin Delta Upland Three-in-one sporting dog collar

And you thought Garmin just made your fitness bands. The Garmin Delta Upland is a three-in-one dog collar that consists of an electronic training collar, a BarkLimiter, and a remote beeper to help locate dogs that are out of sight. Although the collar is best used on hunting dogs, it can also be a good device to train your pooch to be more disciplined. The Delta Upland includes tones, vibration, and up to 36 levels of momentary and continuous stimulation. It also houses an LCD display to switch



among different training modes. The controller can be paired with three collars at one time, so if you have more than one dog, this will be a good investment for you. The bark identification technology in the Delta Upland uses accelerometer technology and is able to distinguish between barking and other vocalisations. Priced at \$261 (₹18,000 approx.) the Garmin Delta Upland can be ordered from Amazon.

TrackSafe Buddy

TrackSafe Buddy is a wearable device for pets that will help you locate your pets using GPS. The device connects to your smartphone using an app that is available for both iOS and Android and usage of the app is free for the first 12 months. The main unit is 6mm×36mm×16 mm in size and has a 500 mAh rechargeable battery with a standby time of a little less than 72 hours. The device also comes with a 6 month warranty for any manufacturing defects. TrackSafe Buddy is priced at ₹8,999 on the



Tracksafe website but can be obtained for a lesser price through e-commerce portals.

FroliCat POUNCE

FroliCat Pounce is an automatic hide-and-seek toy for cats. If you have a cat, you know they love to chase moving objects. Cats can pounce on moving objects for hours on end and that's where FroliCat comes in. The toy features an electronic mouse called Marshal Mouse who zips around on a circular path. The mouse also reverses direction and twitches back and forth to provide hours of playtime for your



Reminders to annoy!

Google Calender adds reminders, so now you can start hen-pecking yourself for every little thing.
<http://digit.in/GoogleCalReminders>



Multi room support!

Chromecast finally adds high resolution streaming and multi-room playback
<http://digit.in/ChromeCastMulti>

Feature



feline. The device is 33 x 30.5 x 7.6 cm in size and runs on 3 AA batteries. Frolicat POUNCE costs around \$35 (₹2500 approx.) and can be obtained from one of the many e-commerce websites.

Tail Lights

Yes, you read it right. Tail lights are not just for your vehicles anymore. In fact, these LED strips of light are now used to keep a track of horses. If you are one who has one or many horses for pets, this gadget is sure to delight. Tail Lights is the first LED safety system for horses. Tail Lights attach to the horse's tail glow in various colour patterns which make it easier to spot your horse. These lights are water resistant, so you can hose your horse with its tail lights on. Tail lights cost anywhere from \$49 for the basic version



to \$499 for the Pro version and can be shipped from tail-lights.com. If you go out and get a horse just to use this cool gadget, you'll be putting the cart before the horse.

Petzi Treat cam

Wouldn't you love to pamper your dog with some treats when you are not home. Problem is, that one treat just won't do and many at a time would be gobbled up in a split second. Petzi Treat cam not only solves that problem, it also acts as a security camera for your pet. You can check in on your pet from your smartphone or



tablet and the Petzi Cam unit also allows you to speak to your pet while you are away from home. The camera has a wide angle lens and a universal treat launcher, where you can fit in any dry, crunchy treats. These treats can be dispensed, three at a time, with an iOS or Android app that connects to the unit. Priced at \$169 (₹11,209 approx), this one is a must for paranoid pet owners.

Locato Smart ID Tag

Locato is a smart ID tag by Locato India, that can be hooked on to your pet's collar. The tag is NFC enabled and also has a QR code which can be scanned. This way, if your pet is ever lost and found by someone else, the tag can be scanned using the QR code or NFC. The scan will fire up an app with the pet owner's information and will



notify the owner with a GPS location of the pet. The app also gives pet owners an option of setting a finder's reward, making it a cool, battery-less pet finding solution at a price of \$32 (₹2,321 approx).

Puppy Tweets

One has to be obsessed with their pet to have this little tag. Puppy tweets does exactly what the name says. It is a tag with a sound and motion sensor, which attaches to a pet's collar on one end, and to a USB receiver on a computer, at the other. While pet owners are away, if the pet moves or



makes a sound, the tag communicates with the USB receiver, which then sends users a tweet describing the action. Puppy Tweets can be bought for as low as \$16 (₹1,060)

Tractive Motion Pet Activity Collar

A healthy pet is a happy pet and just like we have fitness trackers to keep our health in check, pets can get their own activity tracker with the Tractive Motion collar. This smart motion tracker keeps your pet's daily activities in check by taking into account steps, movements, playtime and other additional information provided by its sensors. It also measures the environmental factors affecting your pet with an option of customising settings to suit a particular breed. Users can also set goals for their pets and monitor their growth using an app available



on iOS, Android and Windows store. The Tractive Motion costs ₹7,999 and can be ordered from Oliver Pet Care Solutions, an India based pet tech firm.

Those were some cool gadgets you can buy for your pet. The world of pet technology is booming with such devices and for every one device on this list, there are many counterparts from other brands as well. So, here's hoping that your pets remain safe and sound but just incase you want to be extra cautious or if your goal is just to pamper your pooch, technology will always come to your rescue. 🐾

What's the best Lockscreen replacement app for your Android device?

How many times have you actually given a second thought about your lockscreen? There are tons of ways you can customise it to suit your needs, and we bring you the best of them.

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The beauty of an operating system lies mainly in the effortlessness with which it amalgamates form and function. Android, known for its highly customisable nature, has left no stone unturned in handing over the reins of power to the user, which includes letting you change the lock screen. This particular feature lets you do everything right from replying to messages to taking pictures, provided you have the right settings and applications activated and installed, respectively.

With a plethora of useful lock screen replacement applications available out there, you might end up neglecting the need to unlock your phone for the entire day. You might even mistake a couple of them to be one of those home screen launchers. We take a brief look at a few of the more useful ones up for grabs.

1. Cover

This one's a very thoughtfully designed application that'll enable you to do almost everything that one would not generally expect from a lock screen. Of course, there are always two sides to the coin. One major drawback of this application is that you cannot lock your screen from unauthorised users. The option to secure the lockscreen with a passcode or pattern does not exist here.

The first look of the lock screen won't exactly grab your attention as it's just a simple background with a vertical dock of icons displayed towards the left of the

screen. The real magic starts when you hold on to an icon and swipe towards the right. The application opens up in the background, giving you a quick view of its home page, undoubtedly reminiscent of the Blackberry Hub-like feel of the not-so-long lasting Blackberry touch phones. That's not it; these icons in the vertical dock also change with time and location, along with the lock screen background. So you have timely access to the right apps.

Cover will also give you the power to switch between apps without having to actually unlock the screen, wiping out the need to unlock the device for regular usage. An intelligent lock screen replacement application that focuses more on usability and function rather than form; if you want to quickly peek into who messaged you last or check the latest score update from your sports application – all right on your lock screen – then hit the Play Store and look no further.

2. Echo Notification Lockscreen

Now here's a lock screen for those of us who don't like

pending notifications and also believe in attention to detail. Echo Notification Lockscreen, as the name suggests, has notifications as its base feature, which it displays

right up front with detailed information. What makes it stand out from your regular lock screen apps is that all the notifications are in-depth, expanded and separate. This means, each of your WhatsApp messages will be shown as an individual notification on the lock screen rather than the usual '3 new messages'.

What's more, you can tap the notification to open it right on your lock screen and even long press to snooze it and be reminded again at a later time – a highly useful element. The notifications can also be manually classified into groups like Priority and Social for a better organised view. For securing your device you have the ability to set a pattern lock.

Once again a must-have if you want most of your work to be done quickly, by checking your notifications.

3. Go Locker

This one's for the customisation-junkies. It won't be hyperbole to say that this lock screen replacement is



App Glance on Cover



Neat 'Echo Lockscreen'

Workshop

We tell you how to create a seamless content consumption life to attain true entertainment bliss across all devices



Your new resto-manager

Clicktable.com launches its new cloud based software for restaurants, making front desk management more efficient

Feature

a whole set of apps in one, with a highly customisable lock screen equipped with thousands of themes to choose from and a whole lot of personalization options.

The themes can be the usual abstract backgrounds, one that looks like a Windows phone home screen or even one that changes its form with the current weather. The customisable options available at your fingertips range from the ability to turn off notifications to hiding the status bar or date and time. For securing your device, this lock screen replacement would probably give you even more than the stock lock screen – right from the usual passcode or pattern to a neat gesture unlock, which is entirely exclusive to this app.

If you're one of those who wants to be offered something fresh every time you hit the lock button, this one's for you. You can even set your themes to a 'random' mode so as to not have to manually change them frequently. With a new theme welcoming your eyes every time you turn on your screen, this lock screen replacement application is more than just a sweet treat and will add a dash of excitement to the seemingly humdrum activity of switching on your phone.

4. Next Lockscreen

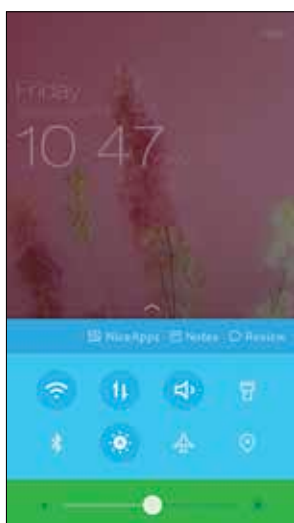
Right when Microsoft decided to have a home screen launcher of their own, they also came up with a beautiful lock screen replacement application for their Android



Cover Lockscreen Home



Microsoft's Next Lockscreen



ZUI Locker - Swipe up control panel

fans. This one amalgamates the best of both, form and function, seamlessly.

The first look of the lock screen is sure to grab eyeballs, as you're compelled to notice the incredible photo backgrounds provided by Bing, which can be periodically updated. Once you begin to tinker around with it, you'll find a Launchpad at the bottom of the screen when you swipe up. This combines applications and quick settings, and will remind you a little of the iOS 9 quick settings. What's interesting here is that the apps in the launchpad change according to your location. Basically, the applications you mostly only use when you're in the office will pop up right when you reach work, by intelligently picking up patterns in the course of your usage.

As for other customisation options, Microsoft lets you manage which notifications are displayed, change the weather settings, show the music player and also gives you the ability to hide apps on the launchpad. For securing your device, the usual passcode and pattern lock options are available.

A neat and well-designed lock screen that fulfils its purpose with élan and doesn't carry a monotonous feel, this one's a keeper.

5. ZUI Lockscreen

One of the more obscure options available on the Google Play Store, this lock screen replacement application will surely add colour to both your device and your life, with

its smooth animations, bright colours and overall fresh look.

The swipe-up control panel which forms the base of this lock screen needs a special mention. On swiping up from the bottom you'll notice a colourful panel filling the screen with quick settings and lock screen settings. Here you can even customize the app shortcuts and set them according to your convenience. Adding to the life of the lock screen is an animated parallax for a wallpaper. So if you tilt your phone towards the right, the background will move towards the left giving you a panoramic view. Theming options, though limited, are also available to your liking.

The level to which you can secure your device with this lock screen is also noteworthy. For your safety and privacy, there are options to even lock the status bar or hide message previews altogether, along with the usual passcode and pattern lock, which also come with a colourful and interactive twist. This is truly the app's highlight, as it even lets you unlock your phone by tapping on images of your favourite people by replacing them as numbers. It makes the entire process fun and your device secure – especially from that one particularly nosy relative who's always peeking into your phone to get a glimpse of your passcode. This lock screen replacement application will inspire a smile every time you unlock your device.

Conclusion

Lock screens were generally used to prevent restrict access to your device or to prevent accidental screen brushes from opening an application. Today, however, with its myriad features, the lock screen actually makes you forget actually having to unlock your device, along with delivering a customized experience of their own. To reinforce and step up the entire experience of each of these applications, I would also recommend you download the launchers that come with them, if any.

As for the one we liked best, it's the Next Lockscreen by Microsoft, which is wonderfully minimal in design and meets all your needs. If none of these fir your needs, you can browse the Play Store and pick one of the several hundred other options available.



Dropbox Shuts Down Mailbox

Dropbox, which acquired Mailbox for close to \$100 million in 2013, has announced that it is shutting down for good. <http://dgit.in/ByeMailbox>



Firefox OS

RIP Firefox OS

Mozilla announced that it will no longer sell or develop Firefox OS smart phones or devices. <http://dgit.in/RIPfirefoxOS>

Powering the Oculus, cleaning the cabinet and silly phone problems

Our readers are at it again and we're here to solve their peculiar problems

Configuration for Oculus Rift

I need some help to purchase a high end customized computer for my college lab. I work in my college and the basic requirement is to run a 3D driving simulator. The simulator is programmed in Java and uses JMonkeyEngine (JRE8). As per my research, the requirement for the simulator to provide the for best performance are:

- 1) Processor > 3 GHz
- 2) 8 GB Memory
- 3) NVIDIA GTX 970 or better

Aside from these, here are some considerations that need to be taken into account.

- 1) Cost should be less than ₹50,000/-
- 2) HDMI port & 64-bit support (for Oculus Rift DK2)

I have a few other related queries:

- 1) Which one would be best keeping in mind the requirements, AMD or Intel processors?
- 2) Are there any other cheaper equivalent to the Nvidia GTX 970?
- 3) What else would be required to meet the above said specification, say power supply(600-750 W), cooling systems, cabinet?

Awaiting your reply, as I have to forward the procurement draft to the college authorities.

—Vipul Nair

A Since you wish to run the simulator on the Oculus Rift, we'll read up on Oculus' official recommendations noted on a blog post highlighting its hardware requirements. (<http://dgit.in/RiftDK2HW>) So you'll need atleast:

- Intel Core i5 - 4590 or better
- GTX 970 or better
- 8 GB RAM or more

The processor costs ₹16.4K but for a little less you can get a newer gen CPU - Intel Core i5 - 6500 for ₹15.8K. To balance out the cost, the cheapest compatible motherboard we could find online

was the ASUS B150M-A D3 for ₹6,868. Likewise, for the RAM we found the Crucial PC4-1700 that cost ₹2,500, so two modules would cost you ₹5,000. As for the video card, the ZOTAC GeForce GTX 970 ZT-90101-10P costs ₹25,950 which is quite a good deal but it is likely that these components might not be the cheapest options by the time you search for them so check out a few price comparison websites before making the purchase. These newer generation of CPUs are quite cool so you can make do with a stock cooler but if you were to move to code with higher computational workload then an



Powering the Oculus

aftermarket cooler like the CoolerMaster TX3 would be an economical and prudent choice. Throw in one or two extra 120mm fans and you should be set. Your power requirements with the above configuration is around 400 W. So by incorporating a little headroom, any 550 W power supply should be enough. The Corsair VS550 is a pretty decent power supply for ₹3,100. A Cabinet hasn't been accounted for, you can pick any cabinet that has enough clearance for the graphics card. And we're assuming you guys already have hard drives.

The cost for these comes down to a little over ₹57,000 (without HDD/Cabinet/Monitor).

As for the other queries:

1. If you are looking at an equivalent in terms of benchmark scores, the

AMD FX 8320 and FX 8350 which cost roughly 12K and 14.5K will do the job. But here's something interesting to note, AMD came out with Project Quantum which is a pre-built machine for VR units using AMD's Fiji graphics card, however, this uses an Intel processor. This is likely because there are certain instruction sets that Intel processors are better built to handle. Plus the savings aren't that great, so unless a side by side comparison is done, it'd be wise to go with the configuration that Oculus has recommended.

2. The Oculus Rift has two screens, each being of 1080 x 1200 resolution/pixel dimension. Higher resolution requires more memory. GTX 960 is designed to optimally utilise 2GB, though 4GB variants exist now. The GTX 970 is designed for multi-display setups with increased bandwidth to push more data. And it's not just the resolution. You even require a frame rate of 75 FPS or more to reduce the chances of getting nasty headaches with the Oculus. 75 FPS is a high frame rate and your graphics card needs to handle not one but two displays at the same time. While the JMonkey Engine simulator will not be resource heavy and a GTX 960 should easily be able to manage the load, we're not sure since we haven't benchmarked an Oculus Rift. So if you can manage to get a GTX 960 from someone for a short period of time you might be able to run the simulation on two screens to check if the display is smooth (75 FPS or more).

Doing the Shuffle

I have an Apple iPod Shuffle. It's quite old so it works only with Windows XP. Recently, my desktop computer had some trouble in starting up. The CPU flashes the power



Google stops selling Nexus 6

You will no longer be able to buy the Nexus 6 officially, hinting at being permanently discontinued.
<http://dgit.in/Nexus6Google>

Q&A

indicator but the HDD access indicator does not light up. More recently, neither of the two lights lit up. It is a very old PC, so I don't want to fix it. I also have a Dell Inspiron 1464 laptop (2009 model). I was thinking if I could emulate Windows XP on it and use my iPod. If it is possible, please list the steps to do the same. My laptop's configuration is the same as the original, only the hard disk has been changed to a Samsung 500 GB HDD (I don't remember the model number).

—Ayush Behera



A All iPod Shuffles work with Windows 7. It's just that the bare minimum OS required for you to sync them happens to be Windows XP for iPod Shuffle 3rd Gen and 4th Gen and Windows 2000 for previous generation of the Shuffles. If you are facing any problems, try to reset the device (<http://dgit.in/ShuffleReset>) or use the iPod Reset Utility (<http://dgit.in/iPodReset>) if it happens to be a 1st or 2nd Gen device.

Even if you do go ahead and emulate a new Windows installation then the moment you try to sync your Shuffle with the new iTunes installation, it'll wipe your iPod. So the whole point of going through the entire process is moot as you'll lose all the files on the device anyway.

Wonky fone firmware

I'm facing some strange problem on my ASUS Zenfone 5. When ever I browse on any browser and then click on the back button, the phone leads me to another app. I can't find out why it happens. I hope I'll get best answer from you. Oh yes, Your magazine is fantastic. I read every article with more attention than my study materials.

—Biplab Kumar

A Hey Biplab, it's nice to know that our articles are more interesting than

coursework. You're not the only one facing this issue Biplab. It's been around for quite a while and is more prevalent if your phone is running Android 4.4 KitKat (<http://dgit.in/Fone5glitch>). Since ASUS has provided an official Android 5.0 upgrade (<http://dgit.in/Zenfone5Lollipop>), we'd suggest upgrading to the latest firmware and figuring out if the problem persists after the firmware upgrade. If it does, then please get in touch with ASUS for a replacement, provided your phone is under warranty, if not try installing a custom ROM and try to replicate the issue. Hopefully, it should go away with a firmware update since this seems to be a software issue.

I need my data

A few days back there was a problem with my PC. My computer was accidentally shutting down every few minutes. I checked and figured out that my computer's hard disk had crashed. Please tell me if I can restore my data.

—Gaurav Agarwal

A If your HDD is still functional, then the best course of action is to install an operating system on another hard drive and use the faulty drive as a slave. This way, even if it does crash, it won't kill your ongoing session. Now begin backing up your data and use a deduplication software (just analyse, don't delete) like FSlint to ensure that all the files are being copied intact. A Linux distribution like Ubuntu or Fedora will be a better choice for performing these set of operations thanks to their inherent stability.

Dusting the desktop

How do I go about cleaning dirt from inside my PC. Please suggest 120 mm chassis fans for GX 900 Antec cabinet for silent cooling, please specify the model numbers of the fans.

—Neeraj Kamal

A For dusting your computer, you can use a blower or a hair dryer set to low heat. Just make sure that your CPU fans and all cooling fans are unplugged. Or you could grab a anti-static brush and carefully dust it, with great care. **d**

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WOLFRAM ALPHA

Are you a Google Now person or a Siri lover? It doesn't really matter because when it comes to raw computational power nothing really beats the Wolfram Alpha computational engine. It answers your query based on data from multiple sources, rather than providing you a link to such sources as search engines do. Even though the Android and iOS apps come with a ₹200/- price tag and the mobile website is fully functional, it is a lot more convenient to use the app. The menu handling and result display is optimised for a smaller display on the apps.

Queried by Apple's Siri, Microsoft's Bing, Samsung's S Voice and many others, the Wolfram Alpha app can do a multitude of things on the go if queried correctly. Apart from solving a host of mathematical and engineering problems, here are a few of its talents we found useful:

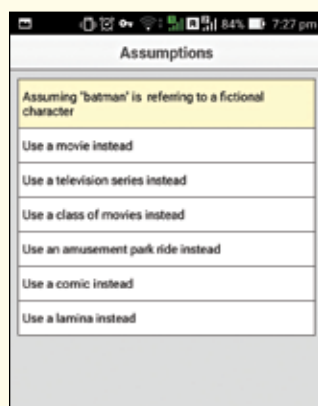
Compare almost anything in the same genre, but not Coldplay and Porcupine Tree please!

Google vs Apple? Check. Titanic vs Avatar? Check. USA vs UK? You bet! All you need to do is type it as A vs. B. You can also use natural language queries like 'A or B' and 'is A better than B'. For certain queries, you can select how Wolfram Alpha interprets your inputs by tapping the yellow 'Assuming A is referring to...' message which takes you to a list of possible interpretations, with A here being either of your inputs. This mechanism is applicable to any type of query on Wolfram Alpha. From companies to countries, this engine can compare anything for you and provide the most in depth



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Tips & Tricks has its own page numbers, and does not follow the rest of the magazine's page numbers. This is done to ensure that you can cut out and save T&T in a separate folder for later reference.



Make sure you get the right one



Who said you need to wait for the movie?

and analytic comparison data possible with public information. Try-it-yourself and enter any random comparison, just don't expect it to decide PC vs. Console for you!

Calculate exercise data, and exactly how long it takes to burn off that Sub

Forgot your fitness band or smartphone at home when

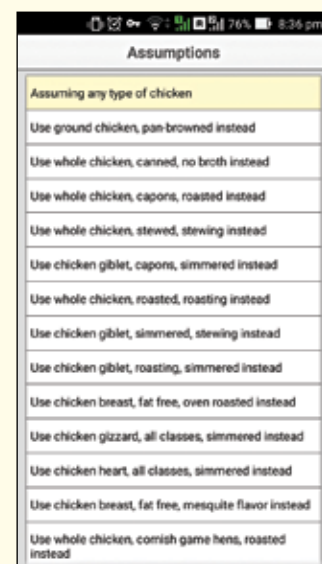


Who knew it would take 30 minutes to shed that snicker!

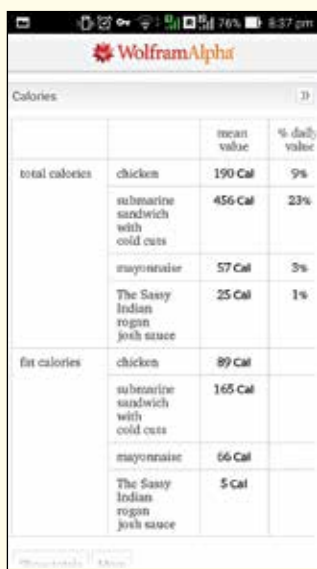
you went for that run or gym? Wolfram Alpha can help. In the search box, enter the exercise type, distance, time, your height, weight, gender or any other applicable details, for example: 23yr old 70kg male height 177cm running 2.5km in 5 minutes. Check the parameters carefully as they vary between exercises. For example it takes distance and time for running, but only time for push-ups. It tells you everything about your exercise like the energy expenditure, oxygen consumed and more.

Check nutrient information of almost any food in any combination

This one is for all the health enthusiasts and diet maniacs. While you're trying hard to tell yourself why you shouldn't eat that McDonald's cheeseburger, try asking Wolfram Alpha. Put the entire name of what you are having (including dips and side-dishes) as the input, like "McDonald's Cheeseburger with fries and coke", check the appropriate assumptions and tap "=" . The result will be a detailed breakdown of each and every compo-



I have seen entire menu cards with fewer options!



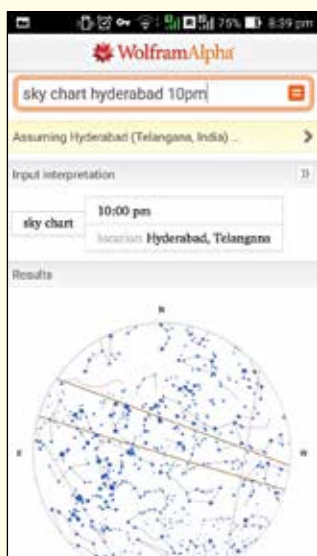
		mean value	% daily value
total calories	chicken	190 Cal	9%
	submarine sandwich with cold cuts	456 Cal	23%
	mayonnaise	57 Cal	3%
	The Sassy Indian rogan josh sauce	25 Cal	1%
fat calories	chicken	89 Cal	
	submarine sandwich with cold cuts	165 Cal	
	mayonnaise	66 Cal	
	The Sassy Indian rogan josh sauce	5 Cal	

Calories! Calories everywhere!

nent of your food and its nutritional value. You can even use it to compare two items off the menu next time you're having difficulty deciding what to eat.

Get the sky chart of any place at any time

For the casual stargazer and the veteran astronomer, knowing where to look is helpful to say the least. Provide the input as the place and the time, like "Skychart Mumbai 10PM", and let Wolfram generate a map of the night sky, with all the stars and constellations



Is that a triangle I see? Illuminati confirmed!

that will be visible at that time from that place based on astronomical data. Zooming into the map is not optimised, so don't expect to spot the USS Enterprise (NCC-1701) yet.

Check the weather in space before you go warp speed!

If all that stargazing makes you long for a trip to outer space, you can check the weather before you head out. Just type "space weather" and find out bulk speed, proton density, ion density and all other details that you need to input into your Millennium falcon before you blast off.

Check your password strength, and get over "password123" please!

In this age of connectivity, we all know the importance of a strong password. If you are not so sure about yours, type "Password strength" followed by your password into the input box and let the engine analyse and report the strength of your password and a list of the criterion it uses for the judgement. You even get a score that you can use to com-



password strength sher

Input interpretation: password strength sher

Results: very weak

Details:

	count	value
length	4	+16
upper-case letters	0	0
lower-case letters	4	0
numbers	0	0
special characters	0	0
middle numbers or special characters	0	0
letters only	yes	-4
numbers only	no	0
repeating characters	0	0

Wolfram thinks your password is quite 'elementary', Miss Adler

pare passwords. Just make sure no one is peeking over when you enter that password.

Use Wolfram Alpha as your music box.

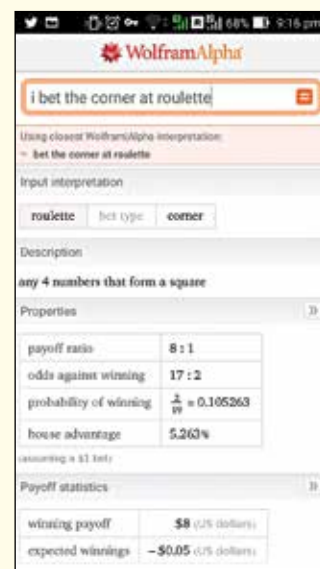
Wolfram Alpha can also generate the sound for any musical note you may need to hear during your next jam session. For example "minor sixth above d flat", "note c5", "intervals C3 Eb3 Bb3 D4 G4" are all valid queries and will give you the corresponding sound along with Standard frequencies, pitch difference and more musical information. You can also generate any standard waveform at any frequency. Although it also offers piano equivalents of other instruments, all we could get out of it was a sharp reminder of audible frequency range.

Analyse your symptoms. Research only!

Don't use this if you are sick. This is strictly research only and the only positive outcome of this could be to convince you how much you really need to go see a doctor. Enter your symptom, like "sore throat" into the search bar and Wolfram Alpha will give you the percentage chances of every possible diagnosis, along with the chances of being prescribed a particular medicine and a host of other information related to your symptom. Most of the statistics are US based but they do reflect the data across a well mixed population. Although this is useful, remember, the doctors studied all those years for a reason!

Calculate Odds and Scores and book that flight to Vegas

Next time you are in a poker game and don't know what your next



i bet the corner at roulette

Using closest WolframAlpha interpretation: bet the corner at roulette

Input interpretation: roulette bet type corner

Description: any 4 numbers that form a square

Properties:

payoff ratio	8:1
odds against winning	17:2
probability of winning	$\frac{1}{19} \approx 0.05263$
house advantage	5.263%

assuming a \$1 bet:

Payoff statistics:

winning payoff	\$8 (US dollars)
expected winnings	-\$0.05 (US dollars)

If only those guys in Oceans 11 had this

move should be, input "Poker" along with the hand, like "poker full house" to get the probability of your win. You can also calculate lottery odds (Input: "Lottery"), coin tosses (Input: "5 coin tosses"), wagers (Input: "4:7 odds, bet 100 bucks") and give you scrabble word scores (Input: "Scrabble Score <Your Word here>"). Vegas, here we come!

Differentiate between colours

This feature is particularly useful for many of us who are colour-challenged. No more guessing in the dark, the difference between 'violet' and 'mauve' is just a search away. Use the comparison feature and input 'violet' vs. 'mauve' or any colour of your choice. You also get the colour codes in multiple representations like RGB, HSV, CMYK etc

Surprise yourself

Apart from all the useful categories mentioned above, Wolfram Alpha also excels in being a lot of fun. If you are trying to have a conversation, need for handwritten results or just in



Now you know where Siri gets that tongue from!

the mood for a joke, Wolfram Alpha has got you covered. You can even try asking about the "number of calories in a light year of apple pie" or the "probability of successfully navigating an asteroid field" and the answers won't disappoint you the least. Have a look at their examples page if you need some starter ideas and feel free to experiment with natural language in your queries.

SCALING THE EL CAPITAN

Apple officially the twelfth major release of its desktop operating system, OS X as OS X El Capitan back in June. Keeping up with Apple's newer California landmark nomenclature, this time it was a rock formation in Yosemite Park. The first public beta was available the very next day and since then we have already seen the OS climb peaks of its own. A number of betas and releases later, here are some of the most interesting and useful things you can do on your Mac, which you might just have missed looking for all those major changes with each release.



Locate your cursor, wiggle wiggle wiggle!

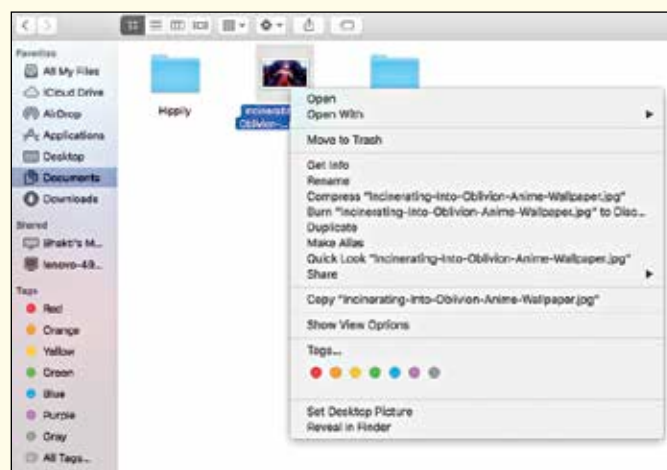
Perhaps one of the most useful new additions in the OS, you can locate that seemingly invisible cursor by shaking your mouse or wiggling your finger on the trackpad rapidly and watch the cursor grow bigger. It is possible to disable this cursor behaviour if you need to. Go to System Preferences > Accessibility > Display and deselect Shake mouse pointer to locate.



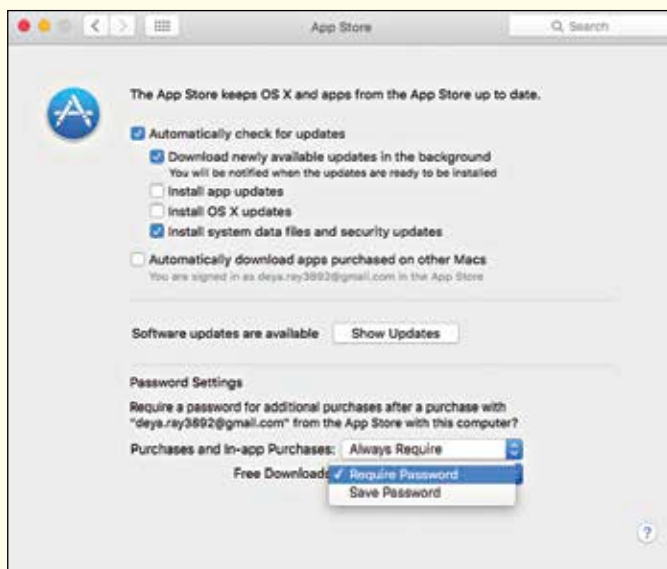
Rename your files, copy file path with right click

In a hat-tipping gesture to Microsoft, Apple has made one task a lot easier for OS X newbies: renaming a file. While it is always easier to just press enter once a file is highlighted, which is OS X's standard way of doing it, now you can right click on the file and click on 'Rename' in the menu, just like in Windows. Most seasoned OS X users won't even notice this one.

Another not so useful feature might be the file path copying. Right click on a file and hold down the Option/Alt key to copy the full path of the file. Might come in handy in rare moments, like when you have a moment's notice to



Maybe rename it to something less apocalyptic!



For free downloads you can permanently save the password whereas for purchases you can disable them for 15 minutes

send the location of those nuke launch codes.



Save your App store password, download Temple Run even faster!

Now you can save your password on the Mac App Store for certain downloads or even the entire store, saving yourself the hassle of entering it each time you download an app. Go to System preferences->App Store and find the Password Settings section at the bottom. From the drop downs available besides "Purchases" and "Free downloads", choose the



Airplay your videos from within Safari, without sharing your entire screen

Airplay has always been a popular feature on Apple devices. On previous versions of OS X, it let you cast the screen of your Apple device on to another device using Apple TV. El Capitan took this up a notch by putting the ability to cast just videos from Safari without reflecting your entire screen. Open any website on Safari which uses a supported web video player (FYI, YouTube does) and click on the Airplay icon on the lower right corner of the video (between Theatre mode and Full Screen) to select the target device. Now you're safe from accidentally sharing that embarrassing tab you've been browsing. Don't worry, we won't judge you!



Permanently delete files in one shot

Previous versions of OS X have quite irritatingly forced you to empty your trash can every now and then to actually delete files



Incinerating into oblivion indeed!

from your system. El Capitan offers a quick and easy solution to that. Select the file and press Option+Cmd+Delete. You can also do this from the menu bar by opening the File menu and pressing Option/Alt key. Your unwanted trash is now truly beyond reach.

Multiple mails in full screen – easier way to work harder

A lot of us use the mail app in full screen, sometimes just to avoid the distractions the internet has to offer. While you are composing a mail, you may need to take a picture or few lines from another mail or somewhere else. This is how this feature works: in full-screen mode click on Compose Mail, then click on the screen outside the new message. The message will shrink down to the lower part of the screen, letting you access the rest of the screen.

Go to your inbox or another folder in your mail to find that photo and copy it. Then click on the title bar of the new email to pop it back into view where you can paste the image now. The image can be dragged and dropped from another email as well. Even better, with the multiple tabs in email now you can have more than one of these drafts on screen at a time - they share the same space with part of the title bar assigned to each.

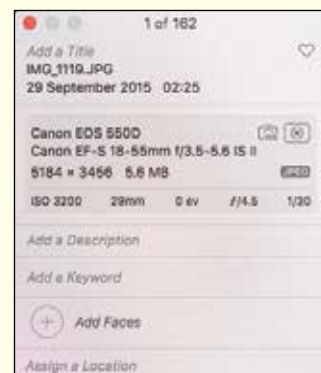
Edit Photo metadata in the new Photos app

When viewing a photo in the Photos app, you can get access to edit the metadata of the photo. Click the Info Button while the photo is open which takes you to a new window where you have the sections Add a Description, Add a Keyword, Add Faces, and even easily add locations in the Assign a

Location section to the picture based on Maps. All that tagging finally made easy.

Return to older Mission Control, back to the past

One of the most significant changes in El Capitan has been the return of the old Exposé behaviour to the mission control view. In Yosemite, opening the mission control gives you the documents of the same app stacked over each other, whereas in El Capitan this has been changed to a separate glimpse of each document. To get the Yosemite view back, go to System Preferences -> Mission Control and check the box next to Group Windows by

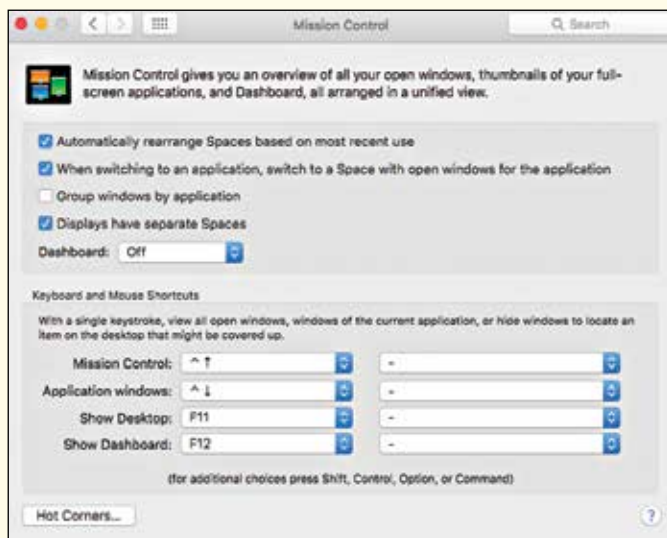


The location feature is integrated with Maps

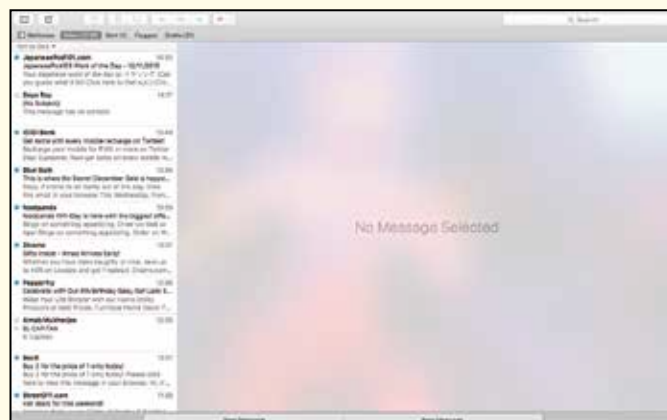
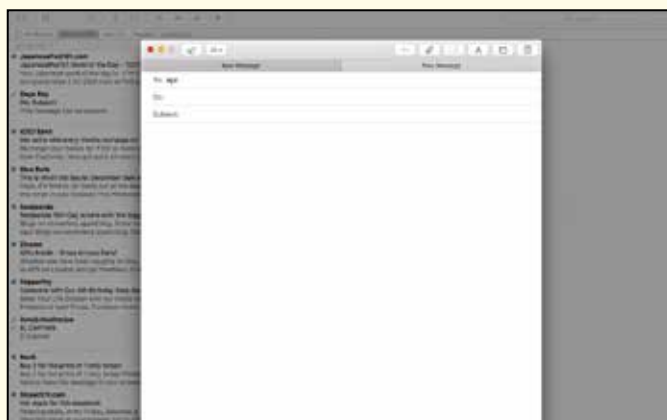
Application. There, now no one can steal the good old days from you.

Show or Hide the Menu Bar

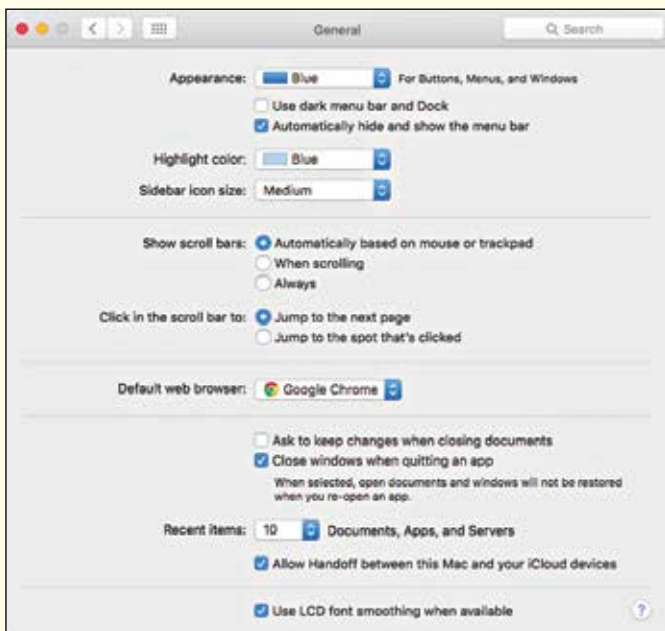
Just like the dock, now you can set the Menu Bar to hide when



You can even change the way the Dashboard appears or whether it appears at all



Both in the maximized and minimised state and both mails being composed appear as tabs



A host of other useful options are also available under General Preferences

inactive. Open System Preferences->General and check the box marked "Automatically hide and show the menu bar". For people with limited screen real estate, this is a very useful feature.

WINDOWS 10 BUILT IN MAIL APP

Microsoft has already had an established mail client bundled into Exchange Server or Microsoft Office since MS-DOS. Not to be confused with Outlook Express, Microsoft Outlook has been an exhaustive email solution with pretty much all the capabilities you would require from a personal secretary (It can't get you your coffee though). It is for this very reason, that many of us find it daunting or somewhat overboard for our needs.

If you are one of such people, or simply don't want to get Microsoft Office, then the Windows 10 Mail App is just the thing for you. It is a much lighter e-mail client yet offers the same integration with your email needs as Outlook. Once you have an account set up, here

are some of the tips and tricks for this app that might just make your e-mail experience a lot more interesting:

Save power and bandwidth by dynamically downloading email

One of the woes of using modern tablets or smartphones is the battery consumed by background operations. The Mail app has an interesting feature that might help significantly in this regard, considering one of the services that constantly keeps syncing itself over the network is mail. Now you can let Mail understand your usage pattern and download new e-mails accordingly. For example if you open your mailbox around 7PM every day, it will refresh your inbox only around 6:30PM, not multiple times all day. Right click on the desired account from the sidebar (or long touch if you're using a touch interface) and go to Account Settings->Change mailbox sync settings. Here, in the Download new email drop down, select based on my usage. Be amazed at all the power saved.

Save Data, once again

Follow the same path as the previous tip, i.e. Right click or long touch on the account->Account Settings->Change mailbox sync settings. In this window, un-checking the box for Always download full messages and Internet images stops Mail from fetching emails in their entirety each time it syncs. Instead, you can see small previews of your messages when you navigate your inbox.

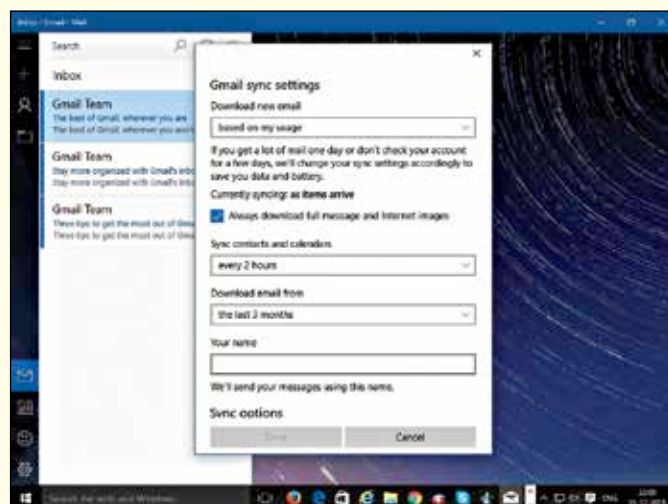
Use your cursor to browse Mail – Caret Browsing

This feature allows you to navigate within e-mail messages

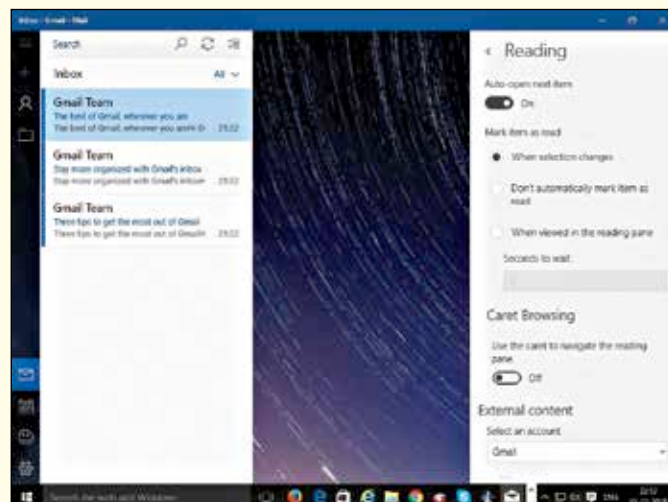
just like you would navigate in a text document. In the Mail app, click on the cog icon, go to Settings->Reading. In the Caret Browsing section, turn Use the caret to navigate the reading pane to On. Now when you are viewing a mail, touching its body will make the cursor appear and you can use the keyboard arrow keys to browse the message and even select and copy text and images.

Use Swipe gestures to deal with email faster

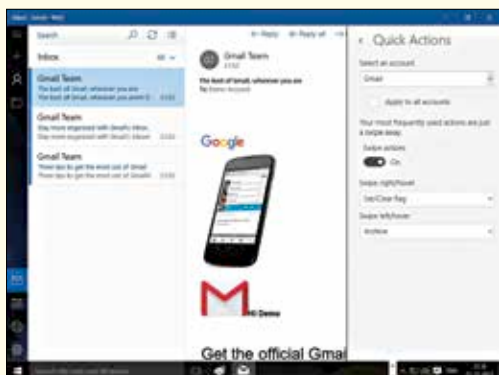
Windows 10 itself has brought in a host of touchpad and touch-screen gestures. One of the best implementations is in the email app, which makes the experi-



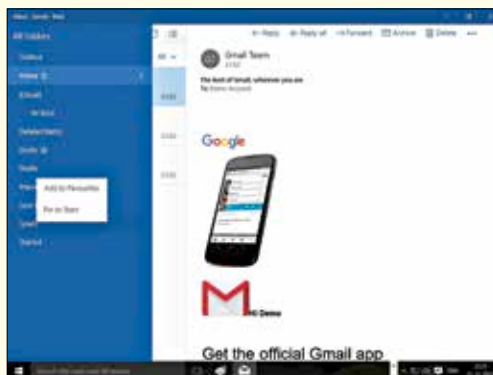
The Account sync settings page holds a number of useful options



Caret browsing can be very useful if you're on a desktop



Desktop users have to hover their cursor over an e-mail to see the options available as a contextual menu



You still cannot create folders from within the Mail App though

ence a lot more similar to using a mail app on a smartphone. Once the app is open, if you swipe left over an email, a green Archive tile shows up underneath, and if you go all the way the mail is archived. If you swipe right, a Set Flag tile is revealed which sets a flag on the highlighted message when you go all the way. It is possible to change what these gestures do. Tap

the gear icon, go to Options under Settings, and in the Quick Actions section, turn on Swipe actions first, then from the two actions list under Swipe right/hover and Swipe left/hover choose the actions that you want to assign to these gestures. Someone using a mouse has to make the cursor hover as an alternative to the touch gestures.



Manage your folders in the mail app

The Mail app, by default, shows only the Inbox, Sent Items and Drafts folders on the sidebar. Any other folder that you might have created in your mail will appear under the More option in the sidebar. To access such a folder directly from the sidebar, first tap or click the

More option to display the other folders. Now right click (or long touch) the folder you want to access directly and select Add to Favourites. Additionally, if you select Pin to Start in the same menu, it pins the folder to the Start screen as a live tile.



Get those lost e-mails back

The first time you set up an existing email account in the Mail app, the significantly lesser number of e-mails showing up might send you into a panic attack. Do not worry; a default sync setting is to blame. Right click or long touch on your Account in the sidebar on the left and go to Account Settings->Change mailbox sync settings. Here, in the list under Download email from, select anytime. Go back to your inbox to see all your e-mails once the sync is complete. **[1]**

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RDP Online Store



Jedi Flakes!

Adding more flavour to your food with the Kellogg's Star Wars Cereals. Yes, its for real.
<http://dgit.in/JediCereal>



World War 3 and...Mars?

Elon Musk is worried that the third world war might hamper Mars missions
<http://dgit.in/WorldWarMars>

Seamless content integration with streaming

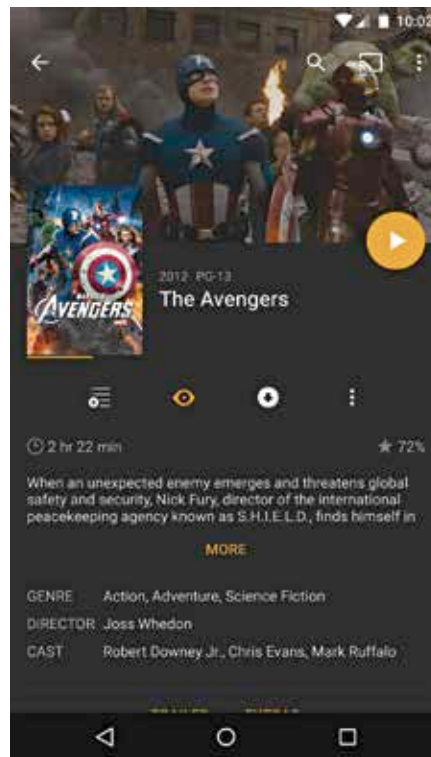
Ever wanted to automate your content consumption everywhere? We have a solution for everyone!

Abhishek Balaji
readersletters@dgit.in

Organising your existing collection of media or updating can be a huge pain if you don't have the right tools to do it. Your media collection can span gigabytes or even terabytes stored on a hard disk, but how do you make sure that content is available with you wherever you are? This guide will tell you just that. Organization of content has become very important now that there are tons of TV shows and movies you can watch, and most of it can be found on the internet, so you'll need to get everything connected. There are several options for streaming content and managing your downloaded content, most of which are easy and will work out of the box, but there are some which will need some technical knowledge. For instance, a simple situation would be if you have a good Wi-Fi router capable of delivering a large bandwidth and have videos and pictures stored on a computer connected to the same network. By using a streaming stick such as the Chromecast or the Roku, and setting up a media server on the computer, you can easily pass content from the computer to the TV wirelessly.

Plex - Your one stop shop

Plex is a two part software, one is a server and the other is a client app. Plex organizes your media collection-movies, music and TV shows, and shares the collection over your local network or over the internet. This will enable any of your laptops, tablets, mobile phones and streaming devices to access the wide



Plex on Android gives you a beautiful interface on your phone

range of content in your hard disk. That's not all, Plex also pulls metadata for the content. For example, if you have a movie, Plex searches through various databases to find information about the movie such as the poster, the cast, crew and even the synopsis and ratings. Plex claims to be "One window into all your personal media. No matter where you are" and it is mostly true.

Plex also allows you to add streaming channels and content from other sources as well. Sadly, not all features of plex can be used for free. If you ever decide to save a few movies or TV shows offline on your phone, you'll have to get a subscription called as the Plex Pass. The ₹340 [\$4.99] a month subscription gives you more control over your content. You can have accounts for each of your family members

and control what each one sees. It also allows you to stream your content outside your network, backup your photos and get early access to apps. If you want to use your PlayStation or your Xbox to stream your content on Plex, you'll need a Plex Pass subscription.

The advantage of using a media server such as plex, is that it can transcode content. So if you are looking to watch your content on a device which doesn't particularly support the format of the files, plex will convert it to a format which you can play. Although this requires a higher powered server, it is useful if you have your content in a large number of formats. Plex has client apps for the Amazon Fire TV, Android TVs, the now obsolete Google TV, Roku, Samsung Smart TVs, iOS, Windows Phone 8 and Windows 8.1. Although some of them are free to use, you'll need to shell out a small amount to be able to stream your content on mobile devices.

How to set up the Mother ship - All your data resides here

A plex server is a dedicated machine which stores all your media on its hard disk, runs the plex server software to organize the media and allows devices on the network to pull the media from it. Your server could be your own laptop or an old PC lying around or a dedicated NAS or a raspberry Pi setup. For the purpose of this guide, we will assume that you have a dedicated PC with windows running and all your media on the internal or an external drive. This system needs to be connected to your router.

Now, to install the plex server, head over to <http://dgit.in/plexmediaserver> and download the server side software. While doing this, make sure that your media is named and organized correctly so that plex can recognize it. This is important as, plex uses the existing metadata to



Star Wars planets compared

Ever wondered how the planets on Star Wars stack up to ours?

<http://dgit.in/StarWarsPlanets>



Suck the sun dry

A town rejected solar powered solutions for they feared it would suck up the sun

<http://dgit.in/SunSuckers>

Workshop

find more information about your media. If your metadata is incorrect or missing, it will lead to incorrect matching, causing you severe emotional trauma and distress when trying to stream content.

Adding Files

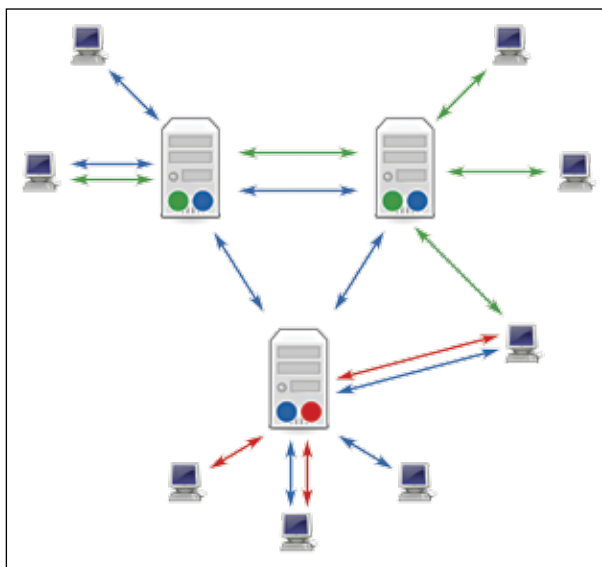
The setup of the server is pretty easy, with a well guided installation. You can add your libraries for Movies, TV shows and Music and point these libraries at your existing collection. Plex will scan your collection for media it can identify and organize it. Once you setup a plex server, you are good to go for basic streaming. You can connect your chromecast and directly cast from your server if needed. For a more complete solution and automatic downloading, read on.

Streaming them across

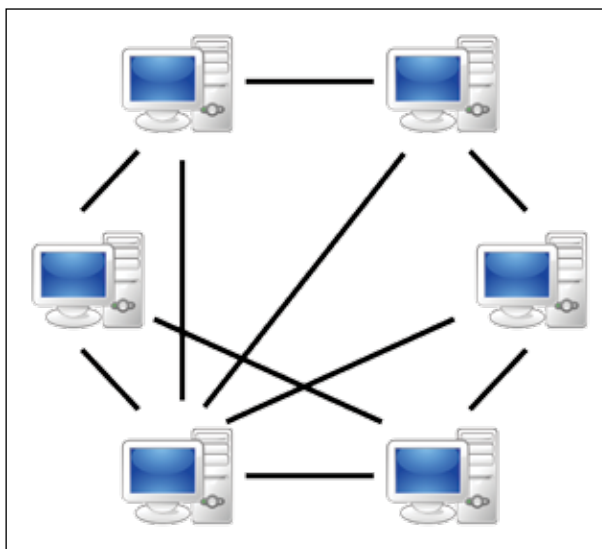
Sharing files over the network was one of the most fundamental purposes of a computer network and the focus has now shifted to streaming media and playback on different devices rather than sharing the files and expecting each device to support the playback of multiple file formats. Today, devices such as the Roku, Google Chromecast and various other streaming devices allow you to make your dumb TV, smart. These devices usually connect through the HDMI port on your TV and connect to the local network through Wi-Fi or Ethernet. You can access all your shared media then, in a beautiful interface on the TV and enjoy streaming your media.

Get more content

There are several ways to get your content. You can subscribe to the many streaming services available or you can download them off the internet. Although some of the content on the internet can be pirated, you will find several Movies and TV shows which are available freely. Torrents and usenets can be used to get these content shared by people around the world.



Usenets work by distributing the data among several servers with no single centralized server.



P2P networks work by using several clients which have the data distributed among them

usenets and Torrents offer the same kind of content, but are vastly different when it comes to the method of getting that content.

Usenets

Usenets are a type of threaded discussion boards, where users can post and reply to messages. The one area where usenets are different from regular forums, is that it's highly distributed. There is no centralized server, and the data is passed among the many servers continuously, owing to the large amount of data that is being shuffled around, the servers have a retention

period. This can range from an hour to several months or years. After the retention period passes, the files and messages are deleted off the servers. Usenets are a solid alternatives to torrents, especially because it's much more secure than a peer to peer network.

Torrents

Torrents provide a wide range of free, copyright free content, but is ridden with illegal rips of movies and TV shows. So, you need to be careful when downloading the free content and make sure you are not breaking any laws.

Peer to peer networks allow users to create a network among many clients. There is no fixed server, and each node acts as a server and a client when needed. Peer to peer networks are decentralized and are hardly regulated. Its advisable to use a VPN when downloading torrents as there is a lot of malicious and illegal content, which might land you in a legal kerfuffle. Using VPN services will severely affect the bandwidth which you get when downloading, but it is the price you pay for anonymity and security.

Setting up a dedicated Home Theatre

A HTPC or a Home Theatre Portable Computer is dedicated computer for media consumption. It is usually connected directly to a large monitor or a televi-

sion and has media on its internal drives or can be driven by a NAS. HTPCs are fairly common among enthusiasts who repurpose old parts to create a new PC. If you consume a lot of media and don't like connecting a lot of devices to your TV.

HTPCs are generally low powered and single purpose. It will run a media server, and can be directly connected to the TV or you can use a streaming stick to stream the content from the HTPC to you TV, saving some clutter. Some HTPCs can be really high powered, with a dedicated graphics card, if you need to run 4K or



Serial is back!

After the much successful season 1, Serial is back titled 'The case of the disappeared soldier' <http://dgit.in/SerialS02>



Jeff Bezos bizarre offer

In an ugly spat between Jeff Bezos and Donald Trump, Jeff Bezos offered to send Donald to space. <http://dgit.in/SendDTtoSpace>

3D content, and are particular about high quality content and have a TV to match it.

Alternatives

SickBeard is an application written in Python, which does the same thing as Sonarr, albeit it has a less slick UI than Sonarr.

SickRage is a fork of Sickbeard. It brings a lot more functionality and a better interface to your streaming nirvana endeavour.

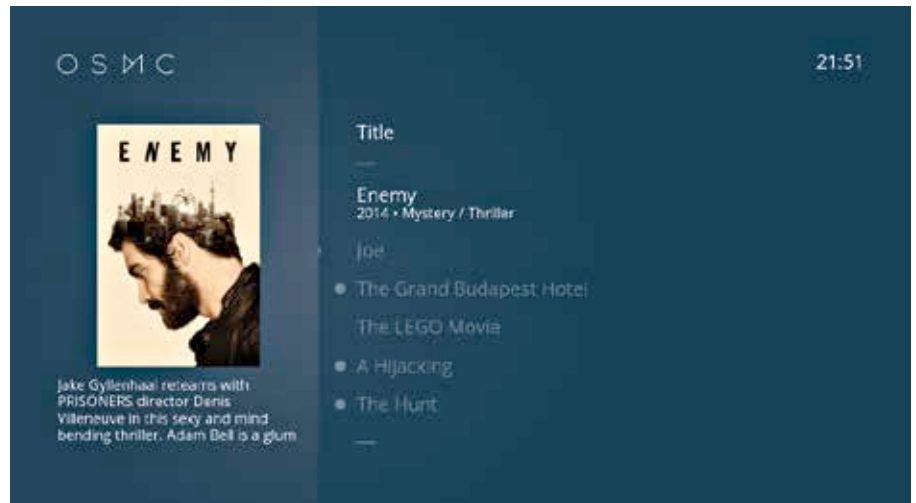
There are a number of alternatives for Plex, such as Kodi, OSMC, OpenELEC and Emby, which are media servers, and to some extent, organize your media quite well.

CouchPotato

CouchPotato is a content manager for movies. You can mark movies 'wanted' and it will scan its various indexers for available files and begin downloading the files for you. After the downloads, you can set it to rename and move the files to the appropriate folders. It also suggest movies from popular sources like IMDb and bluray.com, so if you're not sure what you're looking for, the suggestions will help you decide. CouchPotato also gives you a nice extension for Safari, Chrome and Firefox, so if you see a movie you fancy, you can use the extension to mark it wanted. CouchPotato is available as an installer for Windows and OSX, but if you are running Linux or have a habit of taking things apart, you need to compile from source.

To get started with CouchPotato, head over to <http://dgit.in/CPotato> to download the installer for CouchPotato. Next, you need to open the web interface at `localhost:5050/wizard`, create a username and password and leave the port as is.

You can set the directory to save the torrent files. Adding some services from which you want to pull torrent services in the next step will make it easier for CouchPotato to find your movies online. Now, after you select the Movies you want, CouchPotato will check the services and download the torrent files to the folder. Your torrent application can now be set to check this folder for new .torrent files and add them to download immediately. In BitTorrent or uTorrent, you can do this by



OSMC has one of the most beautiful interfaces among streaming boxes

going to Options>Preferences>Directories and check the box for Automatically load .torrents from. You can also set uTorrent to move the downloaded files to another folder. This is useful in the case of a raspberry Pi or a HTPC with limited internal storage. After you set this up, whenever a movie which you wanted in CouchPotato becomes available, it is automatically downloaded and moved to the folder you want.

Sonarr

Sonarr is a light application that works on Windows, Mac and Linux, and manages your collection of TV shows. Once Sonarr is pointed to the directories where your collection resides, it scans the folders and tells you which episodes are missing from your vast collection. You can also set to monitor some of your TV shows, and Sonarr will keep checking various indexers, and download the necessary files when it becomes available. Sonarr is very flexible and allows you to select which quality you want for each TV show,



Sonarr shows all your TV shows in a nice interface, so you can mark the episodes which you want

customize the indexers, download locations, and subtitles. You can download Sonarr at <http://dgit.in/Sonarr> and use their installer for easy installation and set up.

OpenELEC for Raspberry Pi

OpenELEC is a just enough operating system for computers which are low powered and embedded systems. OpenELEC runs on the raspberry PI and uses Kodi as the media server. You will see the Kodi interface at boot up and will not have to configure any settings in the operating system. You will just need to add the location of your folders and set the metadata scrapers and you're good to go.

OSMC for the Raspberry Pi or Apple TV

OSMC or Open Source Media Center is an aftermarket firmware for the Raspberry Pi and the Apple TV, which provides much more features than the stock firmware. OSMC adds a beautiful interface on top to Kodi (formerly XBMC). OSMC can be easily installed in all platforms by using the installer or directly using the images on the SD card in case of the Raspberry Pi. OSMC is one of the best Operating Systems to run on the Raspberry Pi, and it is much better than the original Kodi interface, which you get with OpenELEC or manually installing Kodi on top of an existing operating system.

You can find detailed steps for all the above apps at <http://dgit.in/ContentStreaming>

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Archer C7



AC 750

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Archer C20

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ADSL



AC 1750

Wireless Dual Band Gigabit ADSL2+ Modem Router

Archer D7



AC 750

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Archer D20

AC 1900

Wireless Dual Band Gigabit ADSL2+ Modem Router

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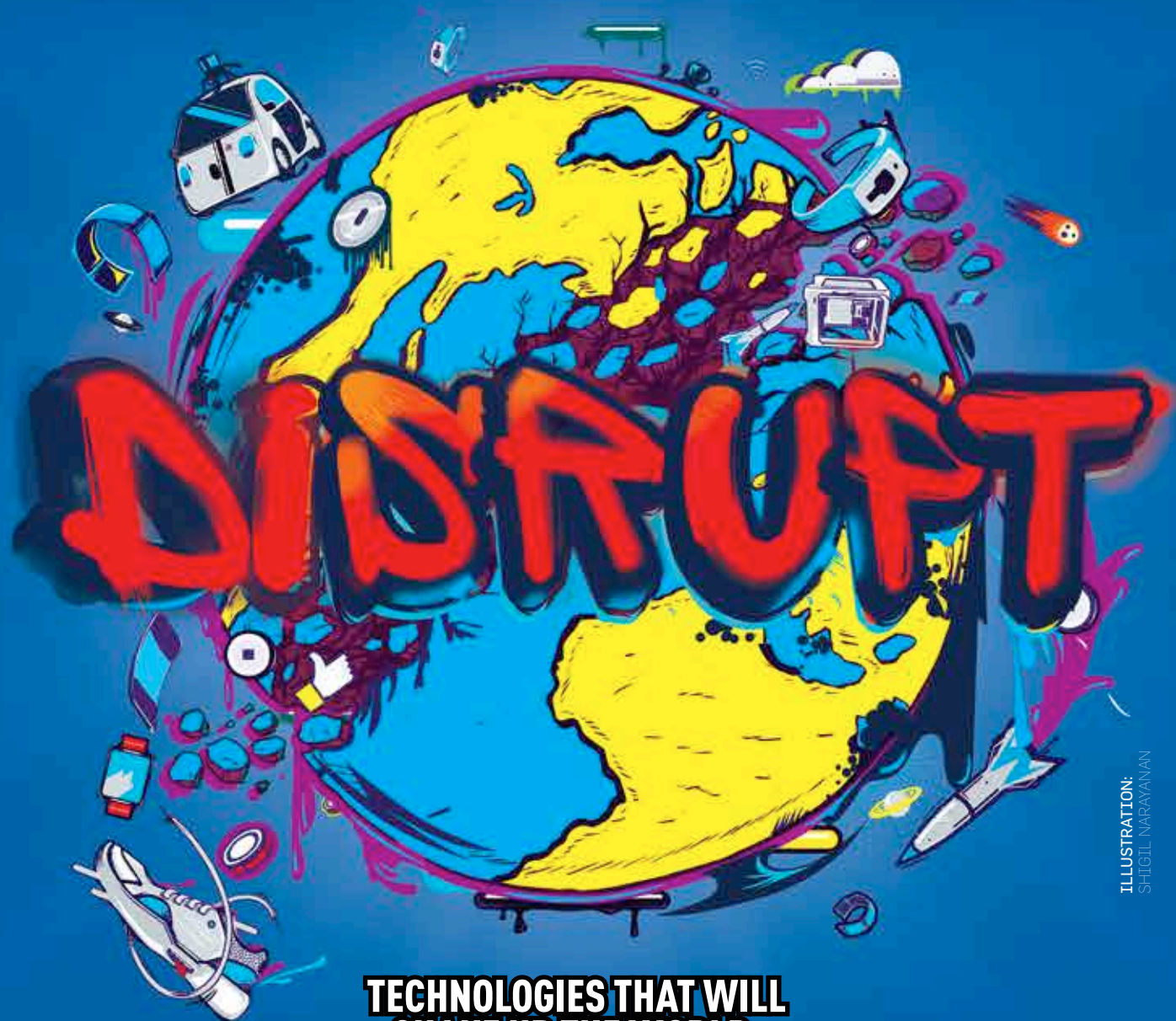


ILLUSTRATION:
SHIGIL NARAYANAN

**TECHNOLOGIES THAT WILL
SHAKE UP THE WORLD,
MAKE BILLIONAIRES AND DISRUPT
LIFE AS NEVER BEFORE**

BY **ROBERT SOVEREIGN-SMITH**

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very so often, when you least expect it, the world changes. Since hindsight is 20-20, when the dust settles, and billionaires have become paupers, some paupers have become billionaires, and when seemingly infallible behemoths fall, we writers sit in judgement nodding our heads like wise sages, pretending we saw it coming all the way... We're almost incredulous and disdainful of the CEOs of aforementioned infallible behemoths, who "allowed" this to happen on their watch. We make wise-cracks. We write seemingly enlightened columns and articles, exploring what options they had, what those signs were, how they could have saved themselves, but the fact is, most often, we ourselves only catch on to the shifting tide at the end any way.

Playing soothsayer in technology is like sitting around playing Russian roulette with a fully-loaded Uzi, hoping the firing pin will jam. Long story short, it rarely ever does, there's always a huge mess, and careers die often. Yet, the unexpected does happen. Just when you've gotten used to a certain way of living, when it seems like nothing can ever change the way things are... something, or someone, does.

Our cover story this month is an (over?) ambitious attempt to break this chain of us always facepalming, going, "Of course! Why didn't we see that coming?". We want to try and look at what will disrupt our lives in the future, and upset the applecart (no, that's not our regular dig at Apple).

Only time will tell if we're right or way off target, but we hope you'll give us props for trying. And remember to write in to us with suggestions of your own, criticism or feedback.

DISRUPT-ED

A LOOK AT SOME OF THE MOST NOTABLE DISRUPTIONS THUS FAR

BY ROBERT SOVEREIGN-SMITH

The future usually lies in understanding the past, and we think it's no different when talking about tech disruption. Strictly speaking, disruption is really just a huge leap forward in a short amount of time, usually because of a new invention that makes something that was really difficult to do a heck-of-a-lot easier.

The term "disruptive technology" was first used by Clayton M. Christensen in his 1995 paper *Disruptive Technologies: Catching the Wave*, and was later made popular by his best-seller 1997 book *The Innovator's Dilemma*. According to him, a disruptive technology (or innovation) was one that would disrupt an existing market, and displace (if not ruin) an existing market leader. Also, since disruptive innovations are rarely ever profitable, and are usually high risk, it stands to reason why they usually come from outside the established industry players.

Now, strictly-speaking, everything from the discovery of fire to the invention of the wheel and then domesticating animals as load-pullers were disruptions in the evolution of the human race, but we're sticking to the modern age here, or basically the past 100 years or so, with emphasis on the last 30.

The first thing we need to understand is that disruptions are not always surprises that jump out of the shadows to strangle an existing market leader. Most often, they're known technologies

or inventions that have been deemed to be too niche, or too expensive, or just too weird and unwanted by the general population. The automobile is a prime example. The first steam-powered automobile was built in 1672 as a toy for the Emperor of China, but in the traditional understanding, many different road-worthy models of steam-powered vehicles started showing up between 1770 and 1800 in France and England. Even electric cars are not as recent as most would believe. Although many prototypes may have preceded it across the world, the Flocken Elektrowagen made by German inventor Andreas Flocken in 1888 is widely recognized as the first real electric car.

To say that horse and carriage manufacturers across the globe didn't have any inkling about the developments in automobiles would be a lie. In fact, automobiles were seen as toys for the wealthy (or the insane), and most people were scared of them because of the sheer amount of noise they made. One can easily imagine a meeting of the owners of horse and carriage companies, sipping their expensive drinks, sitting in their exclusive clubs making jokes about early automobile companies. However, history clearly tells us who had the last laugh...

In the same industry, today, electric cars are being opposed by everyone who makes a living from petrol and diesel vehicles. Petrol pump owners specifically don't want to accept the fact that electric cars are perhaps the disruption of their

industry. Performance and reliability of electric vehicles are increasing constantly, and when the tipping point comes, who's going to need a petrol pump? Petrol pump owners could embrace electric, and have quick car charging stations that would allow electric cars to also use petrol pumps. This might kill the need for innovations in electric cars for the charging and battery aspect, and allow pumps to survive. They won't, because there's no profit in it right now, which will force companies like Tesla to innovate with batteries and making it easy to charge from any A/C power outlet, and when the switch to electric starts to take off, the petrol pump owners are done for... and it will be too late for them to get with the times by then.

UP CLOSE AND PERSONAL

It was in the '80s that the idea of a personal computer took off. Before that, computers were huge mainframes that took up a room and did complex calculations that only a few people in the world could input. The IBM PC (amongst many others) made computers affordable for wealthier Americans. Then the price war started, and PCs kept becoming cheaper and cheaper, and soon almost every middle-class house across the developed world had one. Thus started the digital revolution. However, it wasn't until the Internet came along that the real digital disruption started...

What the PC did was take "computing" out of the hands of the "experts" and put it into the hands of everyone else. Now

anyone with a passion to learn could start coding and experimenting, and that's really where almost all the technology innovation of the past 25 years stems from.

What the PC also did was topple a few big names in the technology world. IBM, despite being the ones who started the disruption themselves, almost got wiped out. In order to quickly come to market and crush the new upstart of a company (Apple), IBM threw together its IBM PC based on mostly existing electronics, which were more importantly, unpatentable. Although it did succeed in ensuring that Apple never really took the world by storm with its MAC hardware and software, IBM opened the floodgates to PC clones, and the price war that followed. The consumer won in the end, but some companies such as IBM and Apple were left with ruined business models. It wouldn't be until more than a decade later that Apple would finally recover, and some would say IBM never really did (certainly not in the consumer space).

THE WEB IS CAST

The "internet" is something that happened in the lifetime of most of you reading this article. However, the idea of connecting people across distances to enable them to communicate probably goes even further back than carrier pigeons! Instantaneous communication probably dates back to the telegram days, and so on.

The first big development to take place was the idea of networking computers across large geographical areas. Then what followed was finding out that not all computers were able to understand one another, because they didn't speak the same language. This is when Vinton Cerf was recruited by DARPA to come up with a networking protocol that all computers could use to communicate with. It was

1973. Cerf had already developed the NCP (Network Control Program) protocol that DARPA's computers used to communicate with one another – that network was called the ARPANet. This is how TCP/IP was conceived. Finally, new year's day, in 1983, the whole ARPANet was rebooted to switch from NCP to TCP/IP. After a public briefing about TCP/IP by DARPA, the commercial world took to TCP/IP en masse, and this is how just anyone could connect to the Internet.



The first ever ARPANet router

However, the real power of the internet was finally released by another disruption. The World Wide Web, as designed by Sir Timothy Berners-Lee, is what sparked the idea of using a web server, and a browser to access the said server. It also brought URIs (Unique Resource Identifiers) which made it easier to find things.

In 1991, at CERN, the first website went live. The first webpage was: <http://info.cern.ch/hypertext/WWW/TheProject.html>.

Berners-Lee also coded the first browser, to be able to access the first web page. Then Marc Andreessen developed Mosaic (which was to later become Netscape Navigator) in 1993, which was the first browser capable of displaying images alongside text, which meant even non-computer-savvy people could look at a web page and understand it... and then the internet went BOOM!

MR. KNOW IT ALL!

What happens when the web starts reaching everyone? Information starts getting shared, and soon enough you need to find a way to find the right information. That's when search engines are born, and many were born before Google came along. Search engines would display links for a search keyword based on how many times the keyword appeared in the specified web page. They then ranked the pages, and displayed them accordingly. Of course there was more complex math than just that happening, but it's a simplified explanation we're after. When Sergey Brin and Larry Page were studying together in Stanford, they started talking about how they could do better than what existing search engines were doing. Instead of basing things just on keywords, they could add complexity and also check how many sites linked to the page in question, and how reliable those sites were. Today, we know that to be their PageRank algorithm, and millions have tried to get the better of it, to game the system, and very few succeed for very little time.

Brin and Page incorporated Google in 1998, almost sold it in 1999 for under \$1 million (because they felt it was interfering with their studies), and then later the same year they got investors to pump in \$25 million. They took over the internet, and then went public in 2004. Today

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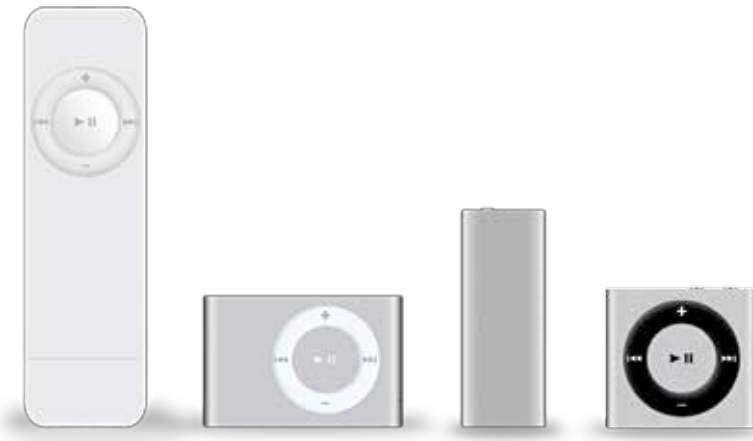
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Google (or is it Alphabet?) is one of the most valuable companies in the world.

Finding stuff is one way to find your information, another is to read through an Encyclopedia. Before the internet came along, we needed to go to libraries to do research, and the rich kids would scoff at you for having to do so, because their parents had bought them the entire Encyclopaedia Britannica collection. Quiz junkies and your neighbourhood wise-asses would read up facts and look for moments to show off their big brains. Those of us (above 30) with limited access to libraries or encyclopaedias would either listen in awe, or secretly plan to strangle aforementioned wise-asses when no one was looking.



Apple's iPod shuffle was one of the best selling models

Disruptions don't always come in the form of yet another capitalist company looking to get rich... sometimes they come in the form of not-for-profit do-gooders. Wikipedia is the obvious example we're giving here, and it came along with a mission to make information easily available to everyone with access to the internet. Jimmy Wales and Larry Sanger wanted the world to be able to share knowledge with one another by making their online encyclopedia a Wiki, so that everyone could contribute. Ward Cunningham invented the WikiWikiWeb (the very first Wiki) in 1994. Wiki is a Hawaiian word that means "quick".

Wikipedia went on to become one of the largest sites in the world, and certainly the most referenced, and if you have used it to learn something new in the past few years, we suggest you donate something to them, so that they can keep it alive. It is, after all, still a nonprofit looking to do some good.

Not everyone loves Wikipedia, though, and many criticise it for having too many flaws, and too many errors and biases creeping into the content on the site because of the fact that anyone can edit the open format. Many articles do not point to reliable sources, and editors don't have the time to fix everything. Internet trolls are also known to keep causing trouble by adding in false information to quite a few pages. You certainly shouldn't depend on Wikipedia to research your college thesis, or anything like that. It's really good for pop-culture and simple explanations of scientific terms, though you should still visit the citations and sources mentioned for a proper understanding yourself. At

the very least, Wikipedia is the easiest to find collection of links to references, further reading and citations on any topic.

FORBIDDEN FRUIT

Yes, yes, we mean Apple. We're not the biggest Apple fans here at Digit, but we have to grudgingly admit that the company did cause some of the biggest disruptions over the past decade.

At a time when the world was still trying to figure out how to deal with music piracy and MP3, and just after Napster had been shut down, Steve Jobs introduced the Apple iPod to the world on 23 October, 2001. Most of the world yawned – another digital music player, and locked to the Mac platform that almost no one owns, how wonderful (that's sarcasm).

Now 2001 was the height of the PC-software development boom, so obviously there were PC workarounds available that let people connect their iPods to PCs to transfer music, but still, it was no big deal.

Apple had also launched iTunes, which was trying to get people to pay for music. Too soon, Apple, way too soon. Napster wasn't even properly buried, the MCAA was suing grandmas, and here was Apple asking you to pay, for MP3s!

Obviously, most competing MP3 player companies would have been sniggering, making fun of Steve Jobs and his iPod. What they failed to notice was that the iPod had brought something new to the table. An improved interface and a way of scrolling through hundreds of songs easily – something you really have to be good at when you offer to let users store over 2000 songs.

Then suddenly, towards the end of 2003, we start hearing about the numbers of iPods sold are now calculated in millions. By 2004 it's 2 million, then 3 million, and the world seems to be going iPod crazy. The touch-wheel scroller seems to be a huge success, and people are lapping it up. Apple also officially embraces PC users (something that we assume was a very tough compromise for Steve Jobs to accept). iTunes reports that it's "sold" 13 million songs, and the world has officially begun to get over its music-piracy fetish. Before you know it, the term "iPod" is used as common terminology for all portable media players or MP3 players, just as the brand Xerox is often used to speak of the act of photocopying.

Apple didn't stop there, however.

In the late '90s and early 2000s, smartphones were meant for business users only, and BlackBerry (then RIM) was the undisputed king of the smartphone game. Players such as Sony-Ericsson, Nokia and Motorola made up the bulk of the sales, but the pinnacle of performance phones was reserved for BlackBerry (and for a short time, Palm).

With Apple already famous for the iPod, and many rumours suggesting that an Apple phone was coming soon, there was a buzz amongst consumers, who now saw Apple as 'cool' once again. On 29 June, 2007, Apple closed all its stores in the afternoon, preparing for the 6 PM launch of the iPhone. People started lining up outside the stores, and of course, media had to show up to see what the fuss was about. Although tied solely to AT&T, the iPhone still sold like hotcakes, with many ditching their providers for AT&T just to get the shiny new iPhone.

Was the first iPhone any good? Not at all. It was almost a prototype that lacked even basic functions, and this caused other phone manufacturers to disregard it as a threat. What they didn't pay attention to was the touch interface that it offered. Almost every existing BlackBerry user laughed at the idea of giving up their hardware keyboard (many still stay with BlackBerry for that very reason), and other manufacturers saw the expensive iPhone as a niche market that would never affect their numbers.

To be fair to BlackBerry, you cannot really blame the company management too much for underestimating Apple. The initial teething problems with the iPhone aside, since Apple was "cool", and was advocating the smartness of their phones, it made sense for the world to start reading up about smartphones. At that time if you googled for "smartphone" you'd probably run into a BlackBerry link. So what did people do? Especially those who didn't want to jump to AT&T, or didn't live in the US, and didn't want to jailbreak one of the illegally imported locked iPhones? Why, buy a BlackBerry of course. We assume this is when ownership-bias crept in, and everyone bashed Apple's iPhone for being a joke of a smartphone.

Then the iPhone improved. Soon it wasn't a joke anymore. It had apps being developed for it, by the thousands! It became available all over the world across carriers and even unlocked. It had incredible resale value. Apple invested a lot in marketing the iPhone and providing service to customers. There was no complicated choosing of models to be done here. You wanted an iPhone? How many GB? Done. Every iPhone offered the same functionality, apps ran well, worked on any network. None of that BlackBerry

special data plan rubbish... well, you know how it is today.

DISRUPTIONS GALORE

The history of computing itself seems to be filled with disruptions. We've highlighted some of the most memorable ones thus far, but by no means is that an exhaustive list.

LCDs disrupted the CRT market. They started as low power, low performance things used in calculators, and now they're everywhere. It was slow in the beginning, but once LCDs started



BlackBerry was one of the first 'smartphones'


improving and gained accurate colour reproduction, that was it for CRTs.

The CD killed the floppy and zip drive market, and flash storage did the same to the CD in return. Cloud storage and increased bandwidth is now killing both of them...

Digital cameras were pathetic compared to film when they first came out. They were low-resolution, power hungry monsters that output terribly pixelated and often blurry images, because the sen-

sors were too slow, and a shaking hand would ruin most pictures. Then, sensors improved, resolutions went up, colour reproduction was better, and suddenly digital took off. No photography professional would be caught dead using a digital camera, because it implied that you weren't sure of your shot. It was meant for amateurs, who needed to click 300 pictures before getting one good one. It was for people who needed image editing in software before they could share a picture. Professionals would never stoop to that level... and then they did. Because as good as you are, you get better when you can immediately see what you've shot, and figure out ways of shooting it better and improving lighting, angles, etc. Today film is niche.

Another thing that's being disrupted is print media. Yes, we're all being slowly killed by digital. Some of us are fortunate to have a loyal reader-base like you, but most are not. Of course, being a technology magazine we've already got a website and there's an app coming soon (whoops! Don't tell anyone, it's still a secret...), but the fact is, print is officially niche. It's an indulgence for those who are fortunate enough and classy enough to still want to read something on paper. Like the people who still read books, magazine readers will never totally go away, but it's certainly not the most popular platform anymore, and it was, just a decade or so ago!

Facebook, Twitter, YouTube, WhatsApp and a tonne of other things can also be considered disruptions in their own right, but we'd need a 100 pages to talk about them all... enough of the history lesson, however, this was just to whet your appetite and get you to put your thinking cap on, to see if you can spot the disruptions that are coming soon... We've got a list of 10 that we're fairly confident about... 

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DISRUPT THE FUTURE!

**HERE'S LOOKING FORWARD TO 10 DISRUPTIONS WE THINK WILL DEFINE
THE FUTURE WORLD WE WILL FIND OURSELVES LIVING IN**

BY ROBERT SOVEREIGN-SMITH

As we said at the beginning of this cover story, predicting the future is a slippery slope. We could have played it safe and gone with the standard story of what you can expect to see in 2016, but we'd probably fall asleep writing it, and you'd definitely fall asleep reading it. Instead, we've tried to look more long term. Some of the stuff we talk about here might only be achieved decades from now, whilst some others could happen in the next three to five years.

Some have already happened, or rather, have already happened elsewhere in the world and are still happening in India. To paraphrase a popular Facebook and WhatsApp forwarded message: Think about the world's largest taxi company – Uber; it owns no taxis. You find accommodation on Airbnb, even though it owns no real estate. The biggest retailer, Alibaba, has no inventory of its own. The biggest media owners are Facebook and YouTube, and neither creates any of that media. Netflix is the world's biggest movie house, and it owns no cinemas... and the two companies making the most money from selling software – Apple and Google – don't actually write the apps that earn them all that money!

What's important to understand, before we start with our own list, is that disruptions are not necessarily as simple

as they were before. The goal for the disruptor has traditionally been to carve a niche for themselves, and to do some new feature, or serve some new need well. Then, when everyone else realises that they really need that too, it starts doing everything else better.

Take the digital camera as an example: at first they were poor quality, they were low-res, they ate up batteries and they were terrible for anyone even remotely serious about photography. They did, however, cut out the need for film developing, and allowed people to click an unlimited amount of pictures, and to see what they'd clicked almost immediately. Eventually as storage prices fell, sensors got better, and the world moved to digital data storage, it became a no-brainer to buy a digital camera. This is a linear path the disruptor took. At least the target audience was the same, and both devices were still cameras. Kodak could have invested heavily in digital camera technologies early on to save itself. At least in theory.

Sometimes, however, the invading disruptor comes from such unexpected sources that there's nothing that could have been done. Take the example of GPS companies such as Garmin and TomTom and the likes. Their business model seemed sound. They targeted vehicles, and obviously everyone wanted directions in their vehicle. They would subsidise

the hardware cost by charging for map updates, and software updates.

However, when smartphones started getting GPS sensors just as good as the ones in these devices, it was but an obvious step for Google to put Google Maps on to the phones. Google started a navigation service, which spoke out directions just as your GPS did. The real disruption was caused by the maps always being up to date as they were stored on Google's servers. Plus, the service was free – all you paid was for data, which you were doing anyway.

Google claims it was not targeting GPS companies at all, and only wanted to offer the best experience for phone users. We believe them, because it's one of the most important aspects of a smartphone these days.

If you think of the GPS companies as stallions running a race, Google came along and accidentally dug a huge trench in their path. Perhaps Google is being honest when they say they didn't mean for all the stallions to fall into the trench and break their legs. However, what Google did next was akin to pulling out the shotgun and putting the injured stallions out of their misery – Google allowed users to download map packs onto their phones, so that even data connectivity wasn't needed when outside. RIP GPS guys, you will be forgotten, sadly.

SENSATIONAL!

Disrupter: Sensors (Automated Systems, Self Driving Cars, IoT)

Disrupted: Everything

What Year: 2020 to 2025

When it comes to disruptors, we're starting off with the one we think will kill many businesses, and create a whole new way of living. Sensors, those little tiny things that are being printed out now, they're that small, are going to make the world so different, that if you went to sleep today and woke up in 2030, you'd think you slept for a century because of how different life will be.

There are many fields of science and technology that sensors will disrupt, most notably, the auto industry, agriculture, manufacturing, and medicine. All of this will be enabled by what everyone calls the IoT (Internet of Things, though we sometimes call it the IoE – Internet of Everything – but more on that later). Sensors are going to go everywhere. Into the food we grow, the things we build, and yes, even us. Let's look at the three biggest disruptions we believe sensors will cause.

THE AUTO INDUSTRY

This one's expected. It's been too long since the last real shake up of the industry. With the oil industry already under threat from electric cars, the auto industry itself is under threat, and from Google, of all companies. Let us try to illustrate how.

Google is currently working on driverless cars. Many others are, but Google is way ahead of everyone else in this particular field. Sensors are the mainstay of getting a car to go driverless. Since a computer can only sense through sensors, Google's using all the sensors it can to get the computer to drive safely, yet not too slowly.

The Mars Rovers, for instance, are an example of driverless vehicles, because they had to be. They would be on an alien world, too far away to be driven remotely, no spares or people to change your tyres or do repairs... That's why they crawl around Mars at excruciatingly slow speeds, more careful of every inch they move than the most paranoid human that

ever lived. That's OK for NASA though, they're not trying to get from point A to point B on Mars, and aren't late for any appointments with the Martians.

Although you'd think Google's job would be far easier, given that its cars drive on nice smooth roads and get regularly serviced, the fact is what they've done is way more impressive, because they already have cars driving about in almost everyday traffic, amidst human drivers who don't always follow the rules, and doing so at speeds of a normal commute.

When the technology is perfected, driverless cars will have to drive alongside humans for many more years to come, and they will need to do so safely.



A prototype of a self driving car by Google

Now assume that day has arrived, and you now own a spanking new driverless car. After all the initial excitement has died down, and they're as common on a road as regular taxis, you're going to be bored, and get back to doing what you do best, which is fiddle with your phone or computing device, and get back to work or play. How do you normally use your car? Apart from the very, very occasional pleasure drive, living in a city probably means you use vehicles to get you from point A to B. If that vehicle is your private car, it's going to be parked somewhere, while you do whatever it is you went to

point B to do – usually work, or school, or whatever. Then when you're done, you either hop into your car and drive back to point A (home), or at best go to point C to buy some stuff, and sometimes point D to catch up with friends, before heading home to point A again.

Seems like you'd still need a car, even after you no longer need to drive it, right? Perhaps. Now consider your parents, or family at home. They also need to commute. They might have a second car, if you can afford it. With a driverless car, it could drop you to point B, go back to point A and take the family around as well. It would certainly reduce the amount of cars on the road. Maybe not all, but certainly some homes would make do with just one car.

Now consider that taxi companies could drop prices drastically, because their biggest cost at the moment is the human drivers. If all they were paying for was fuel and maintenance, they would slash prices to get you to use their cars. They would also be able to afford more cars, which would make them cover more and more areas easily and make availability a breeze. You might choose, like many will, to use only the cheap taxi service. Heck, you might choose to use a cheaper and newer sharing taxi service, which can now accommodate four people in a car (two in the back two in front as there's no driver) with great comfort and luxury seats. All that comfort by just compromising on a few minutes as the taxi takes a few short detours to pick up people headed in approximately the same direction as you.

It's not unthinkable to imagine that many people would choose to do without the headache of owning and maintaining their own cars, when day or night they can get a car to take them where they want to go on demand. What this translates to is a huge reduction of the total amount of cars. We don't foresee a great reduction of the amount of cars on the road. What will

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really be cut out is all the millions of cars that are parked inside offices and homes and at the sides of the roads, not the everyday on-road traffic.

What will happen, however, is that far fewer cars will be sold. Which means that many companies will go belly up, and a company like Google could cause such a shake up of the automobile industry, that we may only be left with a few players in the utility segment. Lamborghini and the types will surely still have the same small niche they have now, it's the Suzukis, Mazdas, Nissans and Fords of the world that really have to be scared of this future.

APPLE KEEPS THE DOCTOR AWAY

Not “an” apple, we mean the Apple – the company. OK, we're just being cute to get a good headline, but the fact is, we're already hearing a lot of talk about how Apple's Watch, and similar devices from others, can revolutionise medicine. What's really new is that you will be wearing sensors, and those sensors will output readings, that will now be shared in real-time with whoever you choose. Let's be honest, we're all a little worried about our health,

so you're not going to be averse to letting your doctor or your hospital get readings of your vital signs. If you have a pre-existing condition, you're actually going to be eager to share the data. Prevention is better than cure... we all know this.

We will cover wearables later as well, but in terms of sensors, we're thinking not just wearable, but eatable, drinkable, excretable sensors. Heck, the sensors might well be planted with the fruit and vegetables that you will later cook and eat. If science has its way, this is exactly the future we will find ourselves in.

Now if you're covered in sensors from head-to-toe, and inside-out, all that data is going to keep you healthy. There's a big difference between a doctor telling you, “Why don't you exercise, it's good for you”, and sensors inside you reporting to your smartwatch that absorbed way too much fat today, and it's already collecting and settling in your arteries. Nothing like a message that reads “Warning: Please exercise for 15 minutes, dangerous levels of plaque found headed to your heart!” to get you motivated.

Who's going to lose their jobs? Dietitians, fitness instructors, gyms, and even

the local General Practitioner. Healthier people equals less sickness, and less need for a general doctor. Maybe that headline should have read ‘Apple killed the doctor’!

SUPER SENSITIVE

That's not all that's going to be disrupted by sensors, though. Many jobs are going to be made redundant in manufacturing and agriculture because sensors will be more accurate than any human ever can. Want to know when to water the crops? Sensors will do it automatically, in fact they can make sure that every plant gets the right amount of water, let alone think in patches of farmland...

Robots already do a lot of the manufacturing for us, and that number will only go up when the same robots start getting more capabilities thanks to advanced sensing techniques. Being able to network sensors will just mean better skill and more dexterity for a robot. This will eventually result in a robot hand that's able to handle an egg far more delicately than a human hand, for example. Or a paint brush. Or when picking fruit... but more on robots later.

FASHION OR FISSION?

Disrupter: Wearables with new interfaces

Disrupted: All screens, all stores

What Year: 2025 to 2030

Yes, this category is certainly also enabled by sensors, but the reason we're listing this separately is because we feel this will usher in a new way for us to interface with technology. We really believe that the touch screen's days are numbered. Or all screens for that matter...

What happens when you start carrying your tech around with you is pretty much what the smartphone did to the PC. Turned out that most people didn't need the versatility of the PC to begin with. Not everyone is coding, or doing complex graphical work, or working on large spreadsheets that require wide-screens and keyboards. Even before the need for a full QWERTY keyboard died, the need for a mouse did, thanks to touch.

You don't even need a keyboard anymore? The little software keypad that pops up on your touchscreen is perfectly fine for most, and if you're using Swype or something similar, you know that the need to tap on specific keys to type is also dying out.

What's next?

How about not even needing a screen anymore?

As surreal as that sounds, there is tonnes of research going into new interfaces. Virtual reality is going to revolutionise the way we get entertainment, for sure, and it's coming sooner than you think. However, apart from gaming and movies and general entertainment value, we struggle to find much more use for it. Yes there will be innovative marketing

done using VR. Perhaps someday you will “experience” Digit instead of reading it, but let's be honest, good old computing is still going to need us to look at something. That's where we think someone is going to come along and disrupt augmented reality (AR), with an offering that will just make every single screen obsolete. Whether it's your computer monitor, your cellphone, or even that spanking new Apple Watch, it could all be rendered pointless with a smart contact lens, or with some huge improvements to glasses.

With companies like Magic Leap and even Microsoft with its Hololens working on some really cool glasses to make almost anything a screen and giving you the ability to interact with your hands, it looks like the future of traditional

screens is bleak. It will also be an interesting change to society if everyone starts wearing glasses. Not just that, can you imagine how your parents are going to react to all the crazy people running about pretending to shoot at nothing while they game using such glasses?

However, the biggest disruption might be to the retail segment. Just as Amazon and Alibaba have done with books, electronics and the likes, proper AR or even VR can make the need for all retail stores to just go away. Want to go shopping? Put on your AR/VR glasses, open your favourite shopping app, and your surroundings are instantly transformed into a department store. Want to check out Electronics while your significant other marvels at clothes? No need to actually go anywhere, both of you can walk, hand-in-hand, down a building corridor and be shopping for very different things in the exact same physical space! Click to buy something, and it will be delivered to you in under an hour. How can that be? When companies don't need to invest in real estate, and some big shopping app does all the hard work making interfaces that you use to buy, all they're left to do is work on speeding up deliveries all around the country (world?), because that's the only way they can try and outdo their competitors... Amazon already offers 1-hour delivery in some cities, if AR and VR ever

disrupt the retail segment, we're all going to enjoy that luxury.

Google's Project Tango aims to use a smartphone camera to be able to map a room of enclosed space in 3D. This means giving the camera the ability to perceive depth as well. Unlike the 2D images we click with the camera – yes we know it



Microsoft's Holo Lens is very promising

appears 3D, but that's only because your brain sees it that way and interprets a 2D image like a 3D one – Project Tango aims to create a proper 3D map (sort of like a game engine maps things, by adding the Z axis coordinates for what's in front, what's behind, etc). If this takes off, any smartphone will be able to map an environment, and allow you to improve the virtual reality or augmented reality experience in that space.

Even if screens don't go the way of the Dodo, we certainly think touch is done

for. Ever since the Wii and Kinect, we've seen that gesture computing is really an interesting thing. However, the movements have to be exaggerated, are too simple, or have low accuracy. Plus, you need to be in front of a sensor – a camera in the case of the Kinect, and that weird white thing for the Wii. But suppose you could track microscopic movements of your fingers over your phone? Google's Project Soli aims at using radar to track minute movements of your fingers and then translates that into an action. Just place your hand somewhere near your phone and make a motion of twisting a dial, and the volume of whatever's playing increases or decreases.

Another distant, yet very real technology is the Brain Computer Interface (something we ourselves have been mentioning for over a decade). Basically, if you could think it and a machine could understand your thought, you would suddenly need no interface to do a lot of your tasks that you currently need a screen for. However, how would you watch a movie? This is where the crazy idea of two way flow of information over the interface comes in. Now imagine your computer sending data directly to your brain! That would be the end of every interface that ever existed... but it's not going to happen anytime soon, so we're dropping that for now and moving on to the next disruption.

THE DEVIL'S IN THE DATA

Disrupter: Internet of Everything, big data, sensors

Disrupted: Medicine

What Year: 2025 to 2030

This will be one huge disruption that we're all going to want. Why? Because it's going to improve the quality of your life, if not the length of it as well. Right now, we're already at the stage where people share their findings in the medical field online for anyone to read. Yes there are some paid journals, and there are many delays because companies want to patent what they can before allowing researchers that they fund to publish anything... academics and scien-

tists often have to deal with a lot of legal red tape these days.

If there's one thing that can change everything, it's the Internet of Everything. We've spoken about sensors earlier, and how they will help medicine, however, it's your body, and you will get to do with it as you please, and if there are sensors collecting data about you, and you've not signed away your freedom, you will be able to choose what to do with that data. So if you've got some rare cancer, and are

making a full recovery, you may want to publish your personal data online and let doctors from around the world draw their own conclusions for their research. This could revolutionise research in medicine, as the amount of funding needed for research would decrease, and open up the field to more actual science being done – race to save the patient, instead of secure the patent.

Apart from enriching research with more data, the sheer amount of data will

also help. Finding patterns becomes easier when data sets grow bigger. Sure it takes more time to parse a larger database, but it also makes the accuracy of predictions better. This would help get to cures for what's currently incurable, and improve healing times because we will have more data to support what really is the best method, to say, heal a broken collarbone (in the long run). There will also be the advantage

of having data from all over the world shared, so perhaps all that data will help us identify specific genes that put us at more risk for some diseases, or even make us more accepting of certain medicines to get cured...

Humongous data for medicine, really does have the capability to significantly reduce suffering in the world. It would also bring down the cost of medicines, and reduce the burden on insurance.

Apart from just big data and networking, a mix of sensor technologies, wearable tech and standard communication protocols will mean that if you ever collapse on a road, the first paramedic who reaches you in the ambulance (or for India, when you are wheeled into the emergency room of a hospital) your entire medical history can be downloaded from a wristband that you're wearing, or maybe from your smartphone, or smartwatch.

HUMANISED TECH

Disrupter: Digital assistants, personalised tech

Disrupted: Apps, services

What Year: 2018 to 2020

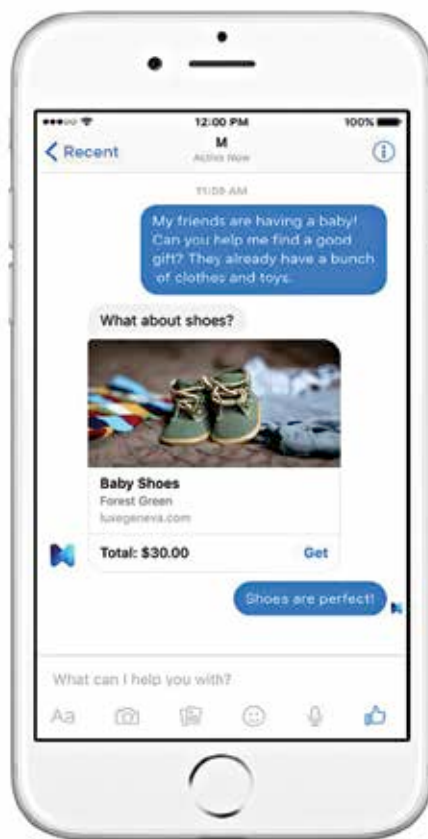
This is probably what we see happening the soonest.

If the internet brought the world to our doorstep, then social media and smartphones made things more localised and familiar (you make friends more from the same city, or those who have similar interests, have the same friends... like a college clique). For the future, we're predicting that tech will have to make things hyper-local, and be focussed on you, and you alone.

You can already see from digital assistants that every big company is putting out there that people feel the money lies in making the technology seem more personal. You are now so special, and people want your business so much, that they're designing their technologies to appear tailor-made for you.

It's all mind-games, and the psychological warfare is being kicked into top gear now. We've written in the past about how you are walking money, and the more unique users a site or service can boast of, and the more information they have about those unique users, the more said site or service is valued in the market. This is the one thing that will never change. Unless rats can figure out how to make money and buy stuff (the creativity and persistence of our office rats sometimes make us think this could actually be possible), humans are going to be the real currency of the future.

The next step in technology is to make your phone unique to you, or your



Facebook's new personal assistant, M

interface with technology unique to you. Netflix (for those who've used it) makes different profiles for different people in the house, based on the movies each one of you watch, your gender, age, etc. The movies it suggests get more relevant over time. It 'learns'. So does Facebook, and YouTube, and every other service. So why

does Siri talk to every iPhone user the same way? What about Cortana? Facebook has started experimenting with M, a chat agent in Messenger that you can talk to and ask questions, and even get it to buy you things (using your money of course).

The idea's not new, to be honest. Services such as Magic (US only), allow you to chat with a person who acts like an assistant and gets things done. Let's say you are busy at work, it's your mum's birthday, and even though you will be late to see her (or maybe she's in a different city), you can chat with someone, ask them for suggestions on what you can buy your mum, ask them about your options for flowers, and they will provide you all the information that you could have found yourself, eventually. They take a small "tip" for their services when you transact with them, but really, they just do what you could have with smart Googling skills and half an hour of focus. A great service for those who don't have that half an hour to spare, and prefer the chat interface.

However, it's not just assistants, we see apps, phone OSes, and everything learning from your behaviour, and adapting to be more relevant to you. Your entire interface with technology might just end up being like your Facebook timeline – finely tuned to getting you to "just keep scrolling, just keep scrolling" – say that out loud in your best Dory imitation (the blue forgetful fish in Finding Nemo, voiced by Ellen DeGeneres).

THINKING MEAT!*

Disrupter: Maker tech

Disrupted: Traditional tech companies

What Year: Already happening

Recently we've covered the maker revolution in stories and even in this month's Fast Track. Why? Because with the digital age come digital children. Kids born in the last 15 years have always known technology to be a part of their lives. Sure there have been improvements, but by and large, technology is not this alien thing to be poked at suspiciously. Most of our grandparents (and quite a few parents) fall into this category of the non-tech-enabled generations. Many of them have learned and adapted, true, but it is still alien to them. It's like you learning to speak another language on your own as an adult – sure some will manage beautifully, but most will never be anywhere as good as those who grew up speaking that language.

It's the same for the digital age kids. They are just so much more fluent in geek, that they can't help being coders and makers. We see the future of technology as being driven by individuals, for individuals. You will write or modify apps to your liking, and then share that

data, and then someone will further modify that to suit themselves, etc. It's the open source project, but on steroids, and with a more selfish goal – to keep yourself happy and productive.

Already the simplified app creators exist, so that many can build their own simple apps. Want an app that pulls various RSS feeds and throws them together to look like a professional news app? You don't need to code it from scratch, there are tonnes of free or paid app builders that will do the job for you in a jiffy. You can literally have an app in a day, and it will look pretty personalised too. Goodbarber is an example that this writer has used, but there are hundreds. Wix allows you to build responsive, mobile-friendly sites, and quickly. It's also just one amongst hundreds.

However, all this is best for the older generations who don't know how to code, and just want point and click creator tools. The next generation is not going to need any of these. They will build on top of much more complex apps, and help better the personalised experience.



GoodBarber lets you easily make apps

What does this do for the evolution of technology? Think adrenaline injection directly to the heart. What we're going to get is literally smart networked individuals processing their own little problems, but adding up to an insane amount of maker power. A human supercomputer of sorts, where every human is crunching the problems unique to him / her, but in doing so, is solving over 75 per cent of the problems that a heck of a lot of other people also share.

This human supercomputer will outperform the biggest and best supercomputers by orders of magnitude, because it will have individual human creativity, which machines don't. However, in order to achieve this on a much bigger and badder scale than is already happening now, we will need the next disruption to occur...

THE MATRIX

Disrupter: Free Internet

Disrupted: ISPs, Traditional businesses, potentially everything...

What Year: 2018 to 2025

Eventually, in some form or the other, we really do need to get everyone on to the internet because a kid in a remote village in Africa or India might have the smarts to cure cancer or solve climate change, if only he or she was given a proper formal education, and allowed to get creative with knowledge...

Yes, all of us at Digit are very well aware that Internet.org, Project Loon and Elon Musk's satellites are all commercial enterprises with very long term rewards. We didn't go ga-ga over Facebook's reason

for supporting digital India, and we know that PM Modi's meeting with Zuckerberg was a business meeting.

Still...

Does it hurt to let Facebook go from 1 billion users to 3, so long as those 2 more billion get some access to the internet? Facebook's rebranded "Free Basics" might be a scam in the making. Sure 1.99 billion of them will just poke one another and share silly forwards, but it's that 1 per cent that interests us. Of course they may be locked into "Facebook's version of the Internet", at first, but do you really believe

that smart people will be satisfied with that? Would you be?

You know, for a fact, that had you been stuck with Facebook's firewalls, you'd find a way to get access to more. VPNs, TOR, tunnelling, whatever it would take. Even paying for an ISP of your own. Just as no one can suppress your hunger of tech, Facebook, Google and SpaceX can only do good by getting kids to discover the internet. Will they get rich from doing so? Of course they will. Is that a bad enough reason to let half the world live in oblivion? Hell no.

ANOTHER DIMENSION

Disrupter: 4D printing, smart materials, 3D printing with mixed materials

Disrupted: Spare part dealers, simple manufacturing, China

What Year: 2025 to 2030

OK. So what the heck is 4D printing anyway. Some new fancy term for faster 3D printing? Not really. When we use the term, we mean 3D printed objects that can assemble themselves into more complex structures.

The materials used here are called smart materials, which isn't the traditional use of the word "smart" – the materials themselves don't think... but then again, neither does your phone or TV, and they're called smart too ;-)

A smart material is one that changes shape automatically to form a new shape. Shape memory alloys are a type of smart material, and they are able to remember their resting shape. When we say remember, we mean that they are able to revert to a particular shape given the same conditions of pressure, temperature, etc. It's not as simplistic as a football, which changes shape all the time when it is kicked, and then reverts to a near-spherical shape

because of the air pressure and the shape of the stitched leather. Here we mean a material which will take one shape to start with and then transform into a more complex shape. So, for, example, in MIT labs, they're 3D printing strings, which when put into a liquid, will transform and become anything they want – "MIT" written in cursive, the shape of a protein, etc. If you wanted to 3D print that shape, it would be complex, you'd need a much more expensive 3D printer, and it would be a slow printing process. With smart materials you can quickly print a flattish shape – say, a cardboard cutout-like cross – that folds up to become a cube. Printing a hollow cube would be a pain with a 3D printer, but a cross is easy. Then you leave it in a solution, and it folds itself to become a cube!

All of this is made possible by 3D printing, and some would say it's just all advancements in 3D printing. However, with more and more materials and

smart materials finding their way into 3D printing, that day is not far off when you will be able to print your own spare parts at home. Want a carbon fibre tennis racket? Print it! Want new shoes, but with your own personal design on them? Print those out too...

Marry the previous disrupter with this one, and you can see how it spells doom for all those little repair shops everywhere. Spare parts business? What would be the point of that? It might also be of global significance. You know all those Chinese things you buy – toys, gadgets, everything... – why buy them when you can print them yourself? It would just be cheaper in the long run...

If 3D printing catches on as it should, we're predicting the end of China's dominance over everyday household products that are shipped across the globe. They may still make all the iPhones, but you will print your own plastics for the home!

ANOTHER BRICK IN THE WALL

Disrupter: Internet

Disrupted: Education

What Year: 2020 onwards

We're predicting the end of education as we know it. Sure, maybe you will still go to school to get a formal education, but you may not have to learn as a "classroom", where everyone learns the same things. You may actually choose or be given the task of learning something very different from other kids your age. This will be a good thing. Also, expect to see more and more adults going back to school.

With fast and consistent access to the internet, most of us are already getting our knowledge solely online. A few of the videos and courseware from our Digit DVD and the Fast Track and dmystify might help a lot of you learn new things – and this is good because it pays to have someone choose what you should read about once in a while.

However, we're willing to bet that most of your reading and video watching is done online. You're usually looking for stuff based on what you need at the moment.

So what do you do if you want to take up a summer job at McDonald's? You get some wise-ass who has the IQ of a bug lecturing you about using the fryer. Wouldn't it be so much cooler for McDonald's to send you off to a room with a computer and a fryer where you attend an online course on how to fry, well, fries. You then demonstrate to some senior your fryer skills, and if satisfactory, get on with working and earning some pocket money. It's a win for McDonald's, because they get to ensure uniformity of the fries across locations, and for you because you don't have to be tortured by bug-boy.

It's not just for simple jobs like that... you could be an investment banker, and get a quick crash course in a new software product. It could be a Yoga course to help you relax, and control your blood pressure during intense stock trading sessions, leading to more cool-headed deals.

Just bought a drone from China? Take a quick crash course in how to assemble and program it. Literally anything you wanted to learn, could be taught to you.

Technology is set to change the education game in ways that they cannot imagine. Many forward-looking educational institutes are already investing in courseware and specific courses like the ones we illustrated above. They will probably be left standing when the dust settles.

I'LL BE BACK...

Disrupter: Robots, or humans

Disrupted: Manufacturing

What Year: 2022 to 2027

This one's a toughie. We are officially sitting on the fence, and we refuse to budge. Call us whatever names you want to, we're going to paint both pictures and give you the tough job of choosing whichever one you deem to be the more likely future.

ROBOTS ARISE!

As big data is more pervasive about everything, and as sensors give computers more fine data to process and understand, the machines will get smarter. Whether they will attain sentience is stuff that we leave for sci-fi writers to discuss, but we're all in agreement that they will get wiser. They say with age comes experience and wisdom, and robots (or machines in general) will have more and more data to work with and draw conclusions from. With sensors going everywhere, and reporting everything, robots will be able to make fine adjustments that humans just cannot – if you can't see at a microscopic level, you can't adjust anything at that level either.

Think F1-level sensors and computations being done for your Maruti! Surely performance will increase in every aspect. Now apply that to all manufacturing, and you will arrive at perfectly designed

everything, made to precision by robots. As we demand more and more from our products, with them getting ever smaller and complex, can anything but robots build any of the things we want anyway?



Industrial robots are evolving

ROBOTS FALL

The flip-side is that there are just too many humans. In the end, it all boils down to money. Currently, robots are cheaper for specific tasks that are repetitive and need high precision.

Now it is possible that the prosumers will end up making (3D printing) their own stuff, leaving the regular folk to pay for factory made things. With so many

humans on the planet, and the number only growing, it's not hard to imagine the costs of semi-skilled and skilled labour going down (relatively speaking). If the free internet projects take off, and more and more people get access to technology, there will be an abundance of labour, all willing to work for cheaper than the costs of setting up robot factories.

Besides, the envelope is being pushed in every field. Take the humble fan for example. Yes, the table fan. As anyone with kids will tell you, it's a nightmare trying to keep toddlers from sticking their fingers in the fan to touch the blades. Thus, the bladeless fan was invented. Then LEDs added, and they became a fashion statement. Traditional fan makers, have to start adding colours, and change the shape of blades, or add LEDs, automatic timers, sensors to prevent over-heating, etc. The days of design once and forget are long gone, and people want to follow fads. All this constant change means that robots become too expensive to keep reprogramming, and people are just easier to re-train. This is the main reason why we feel that there just will be no space for robots in almost all of the world, barring a few underpopulated countries.

UNDER THE BRIDGE

Disrupter: Trolls

Disrupted: Everything


What Year: 10,000 BC to tomorrow (we can hope)

When talking about disruption, it seems a little obvious to mention trolls. They live to disrupt. They thrive on chaos. It's the internet version of vandals and arsonists, looking to laugh maniacally as everything is smashed and burned to the ground.

"Catch them, line them up, and execute the lot!", some would scream. "Off with their heads!", screams another victim. However,

we'd rather stay their execution for now. See, we are firm believers that trolls are a necessary evil for society to improve itself. It's important for people to get their buttons pushed, and to explode every now and then, and then realise that what they did was idiotic. Some believe that reacting to trolls shows thin skin, and a weak character. What trolls do is toughen you up and make you thick skinned,

which in turn makes you more mature. However, not all trolls are just pointless hate spewing machines. The definition of troll itself is different for different people. One person's troll is another's brutally honest commentator who just happened to get under your thin skin.

We believe that trolls will drastically change society for the better in the near future, mainly because they... 

**Peeping Tom**

A woman is suing Airbnb after she found hidden cameras installed
<http://dgit.in/airbnbsue>

**Adopt an Emoji!**

You can now adopt any Unicode character to support development of new emoji!
<http://dgit.in/EmojiAdopt>

THE RACE TO SPACE

Sandhya Ramesh
readersletters@digit.in

You're going to be thoroughly spoilt for choices when planning a holiday a century from now. You will still be able to go to the Grand Canyon or the Great Barrier Reef, but you will have to weigh those options against taking a weekend flight to the Moon and back. On the Moon you could take a tour of historic landing sites, check out artefacts, visit planned outposts, take a dune buggy ride across the dusty plains, and click a selfie with the Earth in the background (sadly, yes, selfies will still be around). You could also pop in to visit the astronauts on the space station on your way back, before finally riding a rollercoaster-like descent vehicle back into the atmosphere for kicks.

Today, we're already taking baby steps towards realising this seemingly fantastic vision. Space is finally opening up to someone other than governments, and that's a good thing. Private companies need to make a profit in the end, and that means a rush to improve technologies and reduce costs. Unlike government aided space programs, the private industry needs to see a clear path to profitability, and every dollar spent is duly accounted for by shareholders.

Rocket engines today are almost exactly what they were during the Cold War. And the monopoly of a few entities manning the gateway to space has to be broken. ULA, America's leading rocket launch service provider, charges over \$225 million per launch, as stated on their website. A more recent launch, which we shall look at in a bit, cost just one-fifth of this, at \$54 million. It's not just private companies aiding in this reduction of prices, it's also

How is today's space race shaping the present and the future of space exploration?

a more global push for space by more governments. India, as you all remember, recently led the cheapest successful mission to Mars, ever.

However, it's a bunch of pioneers with keen business acumen that will really make space more accessible to everyone.

What is Space?

Talking about exploring space conjures up images of people in rockets and spaceships, flying off to visit planets. Very Star



Keep it classy Mr. Bezos!

Trek- and Star Wars-ish. However, where does space really start? Nowhere specific, to be honest because the atmosphere doesn't abruptly stop existing, it just gradually thins out into vacuum. So we can't really use the amount of molecules per given volume, but we can use temperature. As you go higher, temperature goes down. Anyone who's been in an aeroplane knows that it's ridiculously cold outside, but pretty warm inside thanks to the air pressure. But what temperature should

we choose? So how do we go about deciding where space starts? The Kármán line, named after Theodore von Kármán, who calculated that if you were in an aircraft, and kept going higher, at one point you'd have to be going exactly at orbital velocity to get the required lift to go any higher. Orbital velocity is the point at which the attraction of gravity and inertia of a body to move out in a straight line instead of following the Earth's curvature balance out, and you achieve a stable orbit. This point is about 100 km above the surface of the Earth. So if you're flying below the Kármán line you're a mere pilot, and above, you're an astronaut (or cosmonaut).

Space tourism

Obviously, when people are talking about space tourism, they're talking about taking people above the Kármán line, and obviously, bringing them back.

Anyone who's seen videos of the Challenger disaster and then the later Columbia one (1986 and 2003 respectively), know that space is not a game. It's dangerous business. It's hard enough to go to space, but coming back to Earth is just as risky.

While Challenger broke up during take off, Columbia broke up during re-entry, underscoring the very real and dangerous risks of spaceflight. A lot of us in India remember the Columbia disaster, not only because it is more recent, but because amongst the people killed was Kalpana Chawla, who was the first woman of Indian origin in space.

Any craft that enters the atmosphere from space has to penetrate it at precisely the right angle. Otherwise, it might



Night Light

Google Play Books adds a Night Light mode to help you read comfortably under the covers.
<http://dgit.in/NightLite>



Xbox gets DDoS'd

Xbox Live was hit by a DDoS and Lizard Squad claims responsibility.
<http://dgit.in/XboxDDoS>

Space Age



Launch of SpaceX Falcon 9 with Dragon capsule for re-supply missions



Blue Origin's New Shepard suborbital system

just bounce off the atmosphere or break up. Furthermore, as the capsule carrying humans enters the atmosphere, it is in free fall, accelerating tremendously. The sheer velocity of the entering craft is so fast that the air molecules can't move away in time, and this causes such high pressures, that the air is turned into plasma (the fourth state of matter). Space craft have heat shields to keep the colossal amounts of heat from getting into the craft. A part of the heat-shield failed for the Columbia, and it's sad that they were literally vaporised!

However, that disaster made us more careful, and all the buzz these days is about the rockets that will carry us into space. There just aren't enough things going up into space, because there aren't enough affordable rockets, and there aren't enough affordable rockets because there aren't enough things going up into space.

Private vs. Government

For decades, space exploration and research was in the hands of governments the world over due to the prohibitive costs

for going into any mission – in the range of billions of dollars.

Businesses are not run by incurring huge costs, coupled with tremendous risks, and no real business model of returns. That's not something any shareholder of a private company is going to give a go ahead to. Countries, on the other hand, are run by politicians, who have very different agendas, and are willing to loosen the purse strings for non-monetary gain, such as national pride, and winning the Cold War, for example. This is why countries push the frontiers, and companies make it cheap and profitable once all the risks are known.

Today, Low Earth Orbit space travel has known risks, and that's why private companies are needed to take the baton over from countries, to do what they do best – compete, find ways to bring down costs, and invent new business models.

While countries push the frontiers even further, it's up to the private companies to make the known frontiers more efficient. Why wouldn't NASA or ISRO use a private company to launch their satellites or payloads when a private company can do it at half their cost? Since the biggest clients for private companies will be the government programs themselves, we're at a point where they will all work in a symbiotic relationship.

The new entrants

Every private space launch company out there is aiming to bring launch costs down for rockets. The most well-known name is obviously Elon Musk's SpaceX, which has set the ultimate goal for themselves of colonising Mars.

SpaceX has set all kinds of records: their Dragon was the first private craft to launch, orbit, dock with the ISS, and be recovered; Falcon 1 was the first private rocket to launch into orbit; Grasshopper was the first technology demonstrator to take off vertically and land vertically (VTVL) from a short height, and the mighty Falcon 9, the first private rocket to attempt a vertical landing after launching into space, failing soft landing thrice before finally succeeding this month.

The other big name suddenly is Jeff Bezos's Blue Origin. Taking the whole



Bulletproof Tesla

There's a bullet proof version of the Tesla Model S in the upcoming movie, The Brothers Grimsby. <http://dgit.in/TeslaBltPrf>



Templates are here!

Templates are coming to Google Docs, Sheets and Slides for Android and iOS. Now, you don't have to start from scratch. <http://dgit.in/DocsTemplate>

world by surprise, Bezos announced on Twitter — with a video, no less! — that the New Shepard rocket managed to achieve perfect Vertical Takeoff Vertical Landing (VTVL) after reaching outer space. New Shepard crossed the Kármán Line and reached outer space at 105 km.

Bezos's announcement not only brought him a lot of attention, but also triggered a slew of defensive responses from Musk who chose to explain why Falcon 9 and New Shepard are not really comparable.

Musk is right. Blue Origin's New Shepard (NS), while impressive, is not exactly an equal competitor to SpaceX's Falcon 9 (F9). Although these two are currently the hot favourites in any reusable rocket discussion, they are two very different projects.

The instant you see images of F9 and NS side by side, you know they're different. F9 is thin and long, while NS is short and stubby. F9 is meant for launching

stage separates and begins descent. Also, since F9 aims to get to orbital velocity, its velocity at approximately 9000 kmph is thrice as high during separation as the SN's 3000 kmph. This, in addition to different orientation as well. The Falcon 9 turns parallel to the Earth's surface during first stage separation, while NS remains vertical, the way it took off.

All of this is important because each private company has different targets and as a whole are bringing space travel closer to the common man. Apart from these two, there are also other names. The third biggest is probably Richard Branson's Virgin Galactic. The SpaceShipTwo is a "spaceplane" that can fly both in air and space, and gets launched after being carried up to a specific altitude. Virgin Galactic infamously has people with tickets waiting in line to get to space on the SpaceShipTwo, but hasn't successfully managed to launch it into orbit safely. In fact, the breakup of a test craft in late 2014 causing the death of a pilot was a rude reminder to the world just how delicate and fragile spaceflight still is.

Yet another name that crops up is XCOR, whose Horizontal Takeoff Horizontal Landing (HTHL) craft, much like SpaceShipTwo, is called Lynx and is scheduled to be tested sometime next year. The British company Reaction Engines Limited meanwhile has a similar plan for Skylon, funded by the British govt. Skylon is an ambitious craft that aims to take off and land on a runway like a regular aeroplane. Sierra Nevada's Dream Chaser targets almost exactly the same mechanism. India's space agency, ISRO, is looking to develop a shuttle program as well. There are other companies that are known for their satellite making prowess, like Orbital, that both makes and launches its own satellites in its own rockets.

All of them are ambitious with ground breaking designs that will bring about radical changes in the space sector in the process of transformation to space "industry". All of the private companies in the space industry are trying to achieve one common goal: reusability.

Reusability

That's the magic word, really. In any industry, reusability is always a key component in the manufacturing process. It lowers development costs, improves accuracy, and increases safety.

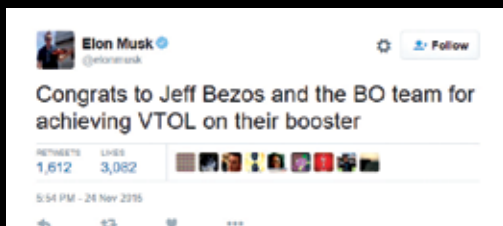
Would you fly if every flight from Mumbai to New Delhi cost you Rs. 15 lakh. Then once you got there you saw them dump the plane in the ocean, before rebuilding a plane from scratch for the next flight home? This is exactly where rockets are today. The average cost of a rocket launch was somewhere between \$200 million to \$500 million. The now reusable Falcon 9, in December 2015, charged just \$54 million, and this cost will go down with every reusable launch. This is why we feel that reusable rockets are more promising than HTHL experimental crafts at the moment.

Reusability comes at a much higher initial cost though. Still, since we're not going to give up on space anytime soon, and we will need more and more satellites to enhance our communications and GPS over the decades, it's not like that research will be in vain. Reusable components go a long way towards reducing the space debris floating around.

The future

Fifty years from now, you won't just fly to space, you will get a choice of packages. You could just do a simple crossing of the Kármán line and coming back, or you could orbit the Earth a couple of times.

A century from now we hope the scenario we painted in the beginning of this article will be achievable. Hopefully, SpaceX will realise their dream, and allow our great-grandkids to choose if they want to travel and settle on Mars or Venus! Maybe probes digging around on Jupiter's and Saturn's icy moons will report signs of life back to our descendants. It's the only real frontier left, and the universe is unlimited in sheer size comparison to us. We're going to have to get off this rock eventually to survive, and we are the generation that will be remembered through history as the ones who started and supported the first initial steps to achieving just that. 🚀



It's all progress anyway right Mr. Musk?

payloads into orbit around the Earth and to the ISS. NS is meant for suborbital flights, which means the flight will not complete a full orbit around Earth, and carrying a maximum of 4 people. In keeping in line with the purpose, the two rockets have very different designs. F9 is very thin and streamlined so as to prevent drag and exit the earth's atmosphere easily to go into space. NS, on the other hand, has a thick sturdy, shorter body and is much wider in girth than the F9. Both the rockets attempt to land the first stage back. This is the stage that usually breaks away from the structure and falls back into the sea, as the rest of the components (second stage and higher) proceed further into their journey.

The height and velocity at which the stage breaks away for each rocket are also important factors to be taken into consideration. At nearly 200 km, F9 goes twice as high as NS does before the first

worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



70 DAYS ON BED, FOR SCIENCE

When the news broke that NASA is paying \$18k for lying down on the bed for 70 days, many applied but only one was selected. Andrew Iwanicki shares his experience of those 70 days and after.

<http://dgit.in/70DaysInBed>

INTERVIEWING THE CREATORS OF BB8

In an interview, BB8 creators Josh and Matt unveil the inspiration and inner workings of the BB8 robot. From the rough sketches to the finished eight BB8's that were made, they spill the beans out on everything about BB8.

<http://dgit.in/FathersofBB8>

THE ULTIMATE SOLUTION TO CLICKBAIT

If you are reading this just because of the headline, chances are you might have fell for click-bait yet again. So why do we easily fall prey to these curiosity building witty headlines floating on the internet? Learn how to avoid getting manipulated by them.

<http://dgit.in/Clickbaited>

ARE YOU LISTENING?

In a successful video, it's not only the appearance, camera angles and visuals that create that impact on your audience. It's high time you start "talking to your audience" to make sure you always have their attention. Pay very close attention to this art.

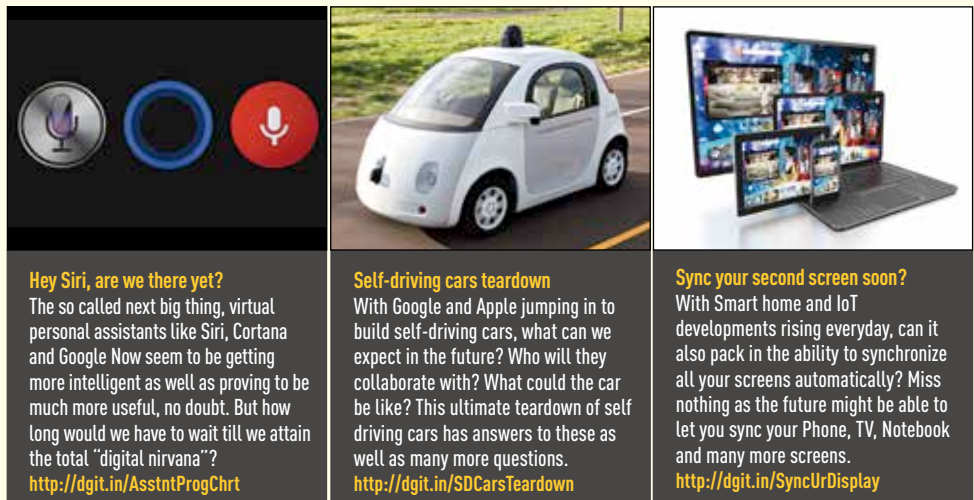
<http://dgit.in/YTLinguistics>

[Re/code Corner]

TO 'UPGRADE' OR TO NOT?



A lot of innovation and development goes in to make that almost perfect piece of technology and upgrades ensures it becomes more efficient. But are they actually an upgrade? More importantly, do we need that upgrade? You'd be surprised by the answer: <http://dgit.in/TechUpgrde>



Hey Siri, are we there yet?

The so called next big thing, virtual personal assistants like Siri, Cortana and Google Now seem to be getting more intelligent as well as proving to be much more useful, no doubt. But how long would we have to wait till we attain the total "digital nirvana"?

<http://dgit.in/AsstntProgChrt>

Self-driving cars teardown

With Google and Apple jumping in to build self-driving cars, what can we expect in the future? Who will they collaborate with? What could the car be like? This ultimate teardown of self driving cars has answers to these as well as many more questions.

<http://dgit.in/SDCarsTeardown>

Sync your second screen soon?

With Smart home and IoT developments rising everyday, can it also pack in the ability to synchronize all your screens automatically? Miss nothing as the future might be able to let you sync your Phone, TV, Notebook and many more screens.

<http://dgit.in/SyncUrDisplay>

DON'T WAIT. AUTOMATE YOUR LIFE, NOW!

Waiting for IoT to kick in so you could lead a smarter life? You definitely can keep waiting or get influenced by this programmer who created python scripts for almost all tasks that took over 90 seconds. Lazy? We think innovative! <http://dgit.in/AutomatedLife>

BEHOLD! THE MALLS OF THE FUTURE

360-degree VR clothing trials, hoverboards to go around, automated bill desks with no queue. What else would you want to see in the technologically advanced malls? We take you to the future, showing you what can the malls in the future have? <http://dgit.in/FutureofMalls>

KEEP EVERYTHING ENCRYPTED

Just when no information or channel is protected enough and there are chances of it getting leaked, we give you a list of security essentials that will guarantee maximum protection and encryption, even in your day to day use. <http://dgit.in/EncryptUrself>

THEY ARE WATCHING YOUR BEHAVIOUR!

In this decade, it is difficult to distinguish between your compulsion to use the internet and to get addicted to it. It is only your habits and behaviour that can given you the answer proven by psychologists. Find out if you're addicted to the Web. <http://dgit.in/Addctd2Int>

SHORTS

The refurbished smartphone buying guide



India has a slew of retailers hawking refurbished smartphones, but can you trust all of them? Here's what you can expect when buying a refurbished smartphone in India.

– By Adamya Sharma

The smartphone industry has, since long, given rise to a slew of supporting industries that have made it possible for us to maximise our experience of using the handheld devices. They keep upping the ante with bigger, thinner, faster, newer and in all ways addictive smartphones and then they make us pay a ransom to own them.

But, the world always finds a way to balance itself out. In this situation too, there are middle men. People who can give us the best of both worlds, or at least hope to. This is the refurbishing industry, a place where smartphones come to die... and then be reborn. These places resuscitate life into devices, price them cheaper than their original unaffordable price tags and then sell them to people like us, who just can't do without that latest iPhone or maybe the S6 Edge. It's called recommerce, the activity of buying and selling refurbished goods.

"Customers across the price segment desire to own a better/higher priced phone but at a budget they wish to spend. This holds good for entry level phones, mid variant phones like YU Yureka and Moto G and high-end like Apple iPhones too," notes Karthik J, Senior Market Analyst, Client Devices, IDC India.

The refurbishing industry finds itself in a constant state of flux and there are occasions when consumers have a difficult time accepting a second hand product or one that has gone through a bit of tinkering post an



accident or even one that was returned to ecommerce merchants like Flipkart or Amazon because someone didn't want them. However, competition in the world of refurbished devices is heating up fast with Amazon and Ebay's signal of intent.

So, we decided to take a look at India's various refurbishing outlets and tell you just what to expect from each one of them. We also used a refurbished device for a week to judge its quality for ourselves. So, from ecommerce to recommerce, read on and find out if refurbished gadgets are a bang for your buck.

Gobol

Gobol is an extension of recycling firm Attero, which sells refurbished smartphones, tablets and supporting accessories. Gobol has divided its smartphone product

inventory into various categories such as surplus, factory seconds, refurbished and pre-owned. This category bifurcation is purely to differentiate between the price of the products. "The reason we have kept different categories is that every consumer will have his own preferred price point. You may want to buy a brand new iPhone and I may be ok with a scratchy iPhone because I really need an iPhone," says Gupta.

The next question that naturally comes to mind is – what about the warranty?

Well, like most other refurbishers, Gobol offers both brand warranty and its own standard 6 month warranty. Brand warranty here refers to the left-over warranty of a device from the date of its original purchase. So if I bought a Samsung Galaxy S6 and decided to sell it to Attero after 6 months, that time period is excluded from the phones warranty period when Attero sells it to its customers. All products under 'Surplus' and 'Super Buy' category and most of the products under 'Carton Damaged' and 'Refurbished' carry manufacturer warranty, unless specified otherwise.

The second type is Gobol's seller warranty which is applicable on 'Refurbished' and 'Pre-owned' products only.

Pricing of smartphones on sale with Gobol is determined by an algorithm developed by Attero itself. Rohan explains that "We have an algorithm that we have developed in house which consists of multiple things like brand, quality, warranty, life-

COMPLETE CYBERSECURITY IN PIPELINE?



On one hand, where IT experts are adding more

value looking at the patterns and search engines to achieve efficient machine learning, cybersecurity remains still a concern. How close are we to find the solution to a completely secure digital space?
<http://dgit.in/CyberSDream>

ADBLOCKERS TO NOT BLOCK 'ADS'?



Ads are primary revenue for any website and

installing adblockers remains the only solution to view contents without ads. So how about using Adblockers to earn money? Maybe developing it to be more 'smarter' can give you a headstart.
<http://dgit.in/NoBlockAds>

ALGORITHMS ARE DECIDING FOR YOU



With all the search traces you leave behind and with

every hit, an addition is made to the database. Every activity, every click gets adds to your 'profile' by the algorithms, in an attempt to know you better than yourself. Stare into the scary reality of our digital age.
<http://dgit.in/AlgothmDecide>

PWNED IN 2015



2015 was a year when Ashley Madison, 000web-host, Adult friend

finder, TRAI and many more had their databases hacked into and published online. Here is a roundup of 2015 as how we fell prey to the hackers and scammers as they took complete advantage of our insecurities.
<http://dgit.in/Pwnedin2015>

cycle and other things. Discounts on smartphones vary from 10% to 60% depending on these factors."

The company has its own refurbishing unit which carries out more than a 100 checks using OEM grade equipment to ensure stringent quality checks.

Overcart

Overcart is yet another destination for buying pre-owned, unboxed and refurbished electronics. They do not refurbish these devices themselves. The smartphones sold here are refurbished by manufacturers themselves.

"We have consciously taken a call not to refurbish ourselves mainly because these are usually not used products. On our website there are chances that if a product has been marked as pre-owned, they are still not used except maybe there are nicks and cuts on the product itself that makes it seem not new. It's okay to underpromise and overdeliver on these things than the other way around," explains Saptarshi Nath, Co-Founder, Overcart

The company claims that 99% of its smartphone inventory is new, what we don't agree with is their policy of 'underpromising'. Why lead consumers to believe they are buying a pre-owned product when its actually never been used? Something here does not feel right.

Another disturbing fact emerged when we questioned them about their quality check procedures. "We have an app for instance that acts as a CT Scan for your phone. Once it's installed on the phone, it will see if all the sensors are working. So, we take out a lot of the manual part of the testing process." Now, the Overcart website states that it has a 72-point quality check, but the company was very vague with



A section at the Attero refurbishing facility

details about these checks. We were told it takes 5-6 minutes to check each device.

The price discounts shown on the Overcart website weren't exactly reassuring either. A Motorola X Gen 2 (32GB) smartphone is listed with a 55% discount but that discount is on the launch price of the device which was actually ₹32,999 (and not ₹33,999 as shown in the screenshot). The price of a Moto X Gen 2 (32 GB) has since been slashed down to ₹18k for a brand new model. Not much of a discount here, is it?

Make sure you check prices of new devices before purchasing on Overcart.

Amazon

Back in August, Amazon started selling refurbished smartphones in India as well. The company claims that they sell 'quality



Screen grab from Overcart.com showing 55% discount on Moto X Gen 2 (32GB)

assured' refurbished devices which have the same after sales support as new devices. Amazon has partnered with Surpluss.in, an online retailer of refurbished devices, to procure smartphones for their refurbished category. As per the agreement, Amazon will buy Samsung, Xiaomi, Apple, OnePlus, Motorola, Micromax, and Lava smartphones from Surpluss.in, for sale on its own platform.

Amazon claims that all devices sold here come with brand warranty and are refurbished by the manufacturer themselves.

As far as price is concerned, Amazon refurbished phones are usually discounted by 2-3k and since these devices are refurbished by manufacturers, they function exactly like a brand new device except for a few cosmetic blemishes mentioned on the product's details page. All refurbished smartphones sold on Amazon come with a standard 6 month warranty, sealed packaging and a 10 day return policy.

Greendust

Greendust not only sells refurbished smartphones but also other consumer electronics. The company is retail offshoot of its parent firm, Reverse Logistics. What Greendust does is very similar to Attero. They restore factory seconds, surplus products and carton damaged products which have never been used. In case of most products, including smartphones, they do a 50 point quality check before making these items available for resale.

The big difference between Greendust and all other refurbishing platforms is that they offer a 1 year warranty on all their refurbished devices.

Read our experience of buying a refurbished Nexus 6 and much more on refurbished buying destinations: <http://dgit.in/RefurbBuyingGuide>

YOUTUBE CHANNEL: EMERGENCY AWESOME

Charlie Schneider on his Emergency Awesome YouTube channel breaks down all the popular



newly released trailers, TV series, games and much more in his videos with references to everything popular on the internet.

<http://dgit.in/EAwesome>



To get all these links in one easy to read page, make sure you blip this page from your smartphone.

(PRODUCT LAUNCHES)

YU YUTOPIA



It packs in a Snapdragon 810 SoC along with 4 GB LPDDR4 RAM, flaunting a mesmerizing 5.2 inch 2K display. It has a 21 MP rear cam, 8 MP front cam, fingerprint reader and 3000 mAh battery. Price: ₹24,999

ASUS VIVOBOK 4K



ASUS' VivoBook 4K features a 15.6-inch 4K UHD display with 178 degree viewing angle. It supports up to a 6th gen Core i7 processor and 12 GB RAM. It is powered by NVIDIA GeForce 2 GB 940M GPU. Price: ₹95,000 (\$1500)

NETGEAR NIGHTHAWK X8



Netgear Nighthawk X8 AC5300 supports speed of over 5 Gbps. It packs in a 1.4 GHz dual core processor, two USB ports and supports six Gigabit Ethernet ports, among other desirable gems. Price: ₹27,000

PICTURE PUZZLE



ABSOLUTE
TIMEPASS

UNJUMBLE ON YOUR MOBILE



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Top 3 YouTube Picks

Make sure your boss doesn't catch you goofing off with one of these videos playing on your screen



#AskSundar

Duration: 1:13:19

Google CEO Sundar Pichai interacted with Delhi students speaking on his career, his journey to Google, and more <http://dgit.in/AskSundar>



Extreme drop test

Duration: 04:19

Motorola Droid Turbo 2 claims to have a shatterproof screen. See if the Droid Turbo 2 survives a drop from 900 feet. <http://dgit.in/MotoTDrop>



What's inside that Pencil?

Duration: 03:48

iFixit tears down the Apple Pencil to bits and couldn't have done it better. Check out what's inside the \$99 Apple Pencil. <http://dgit.in/iPencilTeardown>



The very popular web and mobile framework got a huge update with the beta version of Angular 2.0: <http://dgit.in/Angular2>

Ansible: A quick guide to quicker deployments

>>Ansible lets you deploy complex interdependent and interacting web services using a simple script and no programming.> by Kshitij Sobti

As the complexity of web application servers increases, it gets increasingly hard to orchestrate deployments. Today a web application serving a sizable audience requires a diverse array of servers that handle different things, and interact with each other in complex ways.

A web app is likely to have different servers for the database, serving static files, multiple servers for serving dynamic app content, and often servers to run asynchronous tasks like re-sizing images or other longer-running tasks. Each server will have its own setup of installed packages, configuration settings, and active services. To interact with each other these servers will need to know about each other as well.

If you set it all up by hand you need to ensure you have the right packages installed, the right configuration files in the right places, and ensure that the right services are running. Its easy to skip a step by mistake, and then waste time scratching your head wondering what went wrong.



This can quickly get repetitive and tedious, and its quite obvious that doing this manually is not the right way. Fortunately there is an increasing array of tools designed to alleviate this headache. Configuration management, or IT Automation software like Chef, Puppet, SaltStack and Ansible are available, and they help you define your configuration in one place, and then apply it to your infrastructure to get everything set up in a jiffy. We're exploring Ansible, a free and open-source configuration management tool written in Python. While Ansible cannot run on Windows, it can be used to manage and configure Windows servers as well.

Getting Ansible

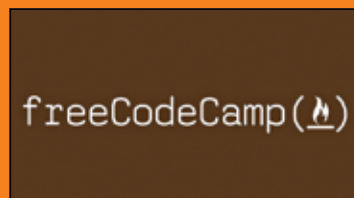
Ansible only needs a recent version of Python 2 installed on to run. Chances are you will find Ansible in your package manager. If your primary OS is Windows, you can use Ansible on a virtual machine, it is a command-line tool and not very resource-intensive for the client. If you don't find it there, you can install it using Python's package manager, pip using `pip install ansible`. You may need to use `sudo` with that if you want to install it globally. To install it for the current user you can use `pip install --user ansible`.

*Coding Matters



*WordPress is Changing

>>WordPress is changing, and modernising to the core. Expect the future of Wordpress to be JavaScript-based rather than PHP. dgit.in/CalypsoDance



*FreeCodeCamp

>>Learn how to program and contribute to open source while helping non-profits at the same time with FreeCodeCamp. dgit.in/FreeCdeCmp



*Windows iOS Bridge

>>Windows iOS Bridge is a developer toolkit allows you to build Objective-C based iOS applications for Windows. dgit.in/WinTosBridge

Ansible Concepts

Inventory

Since the whole point of Ansible is to configure and manage remote servers, you need to provide a list of your remote servers somehow. This is accomplished by adding these to a hosts file that could be configured globally for all your projects, or locally for a single project. Ansible calls this your inventory.

The inventory file is simply a text file conventionally named `hosts`, that has a list of all your servers. These servers can be grouped together to apply the same configuration to all servers in a group. You can even have groups of groups. This file can also include additional variables for configuring each host, such as the remote username, the kind of connection to use, the port, etc. It's even possible to create groups of groups and group-level variables and a lot more.

If you use a cloud hosting service like DigitalOcean or RackSpace or Amazon EC2, you can even use scripts that create a dynamic inventory based your hosting account.



Ansible Tower is the commercial version of Ansible that includes a web-based interface.

Here is an example of what this file could look like:

```
[databases]
db1.server.com ansible_user=ubuntu
db2.server.com ansible_host=192.168.1.27

[appservers]
app1.server.com:27
app2.server.com
```

Commands

With Ansible, rather than connecting to your server using SSH and then running commands, you specify a host on which to run a command and the command to run there. Ansible will connect to the server using SSH and run the task for you.

This may seem like a nuisance rather than a benefit, but remember that with Ansible you can have groups of hosts. This way you can run a command on hundreds of hosts at once. For instance if you have all your `webservers` defined under a group called `webservers` you can restart the Nginx webserver on all of them at once using:

```
ansible webservers -m service -a "name=nginx state=restarted"
```

In the above, `webservers` is the name of the group of hosts (or single host), and `-m service` here tells Ansible to run the `service` module used to restart services using `init`, `systemd` or `upstart` and following `-a` are the parameters to pass to the `service` module, which are the name of the service and its state.

If your command needs `sudo` to run, you can add the parameter `--become`, and add `--ask-become-pass` to have Ansible ask you the `sudo` password.

Playbooks

Running a command at a time has its uses, but what Ansible really is for, is building a list of such commands as tasks, and then applying these sequence of commands to a host to get it into the state you want.

Ansible does this using Playbooks; these are text files written using the YAML format that describe a servers configuration. In a playbook you specify a set of tasks to perform on each host or host group. When you run Ansible on this file, it will perform these tasks one-by-one on all the supplied hosts.

Tasks

A task is a single step in configuring a host. Such as creating a user, copying a file to the server, enabling / disabling / restarting a service, cloning / updating a code repository, installing / uninstalling / updating a package etc. Through multiple steps you can get the server set up the way you want.

Ansible only performs a task if its necessary. If the package you want is already present, it won't install it again. It won't copy over a configuration file if it hasn't changed, etc.

Tasks can also be grouped by tags. You can then provide a tag while using the Ansible command, to run only the tasks having that tag.

Notification Hooks

What if you only want to run a task based on whether another task needed to run? For instance, restart Apache only if its configuration file was updated. For this, Ansible has notifications and handlers.

Notification-handler tasks are only run if they are notified to run as the result of a standard task. Such a notification task could then be to restart Apache server. The Apache config setup task can then add the Apache server restart task as its notification task.

You can also use Ansible's integrations with SMS services and mobile push notification services to send a notification message based on what happens during a run of your playbook.

Roles

To simplify reuse, you can even bundle up a couple of tasks together into a role, and then apply one or more roles to a host. For instance you would create an `apache` role that does all the work of installing, configuring and starting Apache, and includes a hook to restart Apache if needed. This role can then be applied to a server.

You could also create a `database` role for your database, and have your web and database server on the same host by applying both roles to the same host, or separate them by applying the roles to different host.

Templates and Variables

It is essential for a configuration management tool to, well, manage configuration files. Often this means editing and changing bits in configuration files to fill in details like IP addresses, server ports,

directory paths, email addresses, user names and other bits of information.

Any such information can be stored in variables which are embedded in configuration files. This way you can change a parameter in one place, and have it automatically update all the configuration files that need that value.

To manipulate text configuration files, Ansible include a rather powerful template engine called Jinja2. Using Jinja2 you can perform advanced text manipulation, such as looping over variables to build lists, and applying filters to text content. There is a simple Ansible command that can process a configuration file template, and copy it in the right place on the remote server.

Facts

When you run an Ansible playbook it first gathers a large collection of facts about the remote server such as the server architecture, OS, kernel details, date and time, hardware details, network connection details (like the IP address), hard disk partition details, and a lot more. In addition to using the variable you supply yourself, you can also use these gathered facts in your configuration files.

For instance, to set up the load-balancer situation we described before, the load-balancing servers' config file could automatically fill in the IPs of all your app servers. Now you could just increment a variable that controls the number of app servers and Ansible will automatically set up the new app server and include it in the load-balancer config.

Building the Linux Kernel with Ansible

Lets now create an Ansible playbook that will compile the Linux kernel for us. Before we can begin writing our script, we should understand the manual steps involved in this process. Our script should perform the following steps:

- Install a compiler and other developer tools to compile the kernel. Remember we assume it is a fresh system, Ansible will only install these packages if not already present.
- Install `git` to get a local copy of the Linux source code.
- Run `make mrproper` in the source directory to clean it.
- Run `make defconfig` to create a default configuration file. Better yet, we could build a nice config and copy it to the server instead.
- Run `make -j4`. Here 4 specifies how many compilation steps to run in parallel. Increase if your system can handle more.
- Run `make tarxz-pkg` make a compressed package with the kernel. Or you could run `make rpm-pkg` or `make deb-pkg` to create an `rpm` or `deb` package.

*pointers

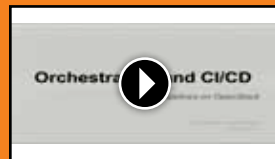
>>Interesting developer news



*Ansible Quick Start Video

>>This official video by Ansible will help you get better acquainted with the tool.

dgit.in/AnsibleQSVideo



*CI/CD with Ansible

>>If you want a quick look into how to achieve continuous integration and delivery with Ansible this video does just that.

dgit.in/AnsibleCDCI



*Etymology of Jargon

>>Where does some of the weirder or confusing terms and conventions in programming come from? Watch this video:

dgit.in/ProgJargon



*SaltStack

>>The four major players in the configuration management space are contrasted and compared in this Google Hangout video by Rackspace.

dgit.in/AnsibleHangout



If you have an account on Amazon AWS or similar, you could create a temporary server to run all this on. Else, it is possible to test with local commands on your computer as well. We will assume you are running Ansible commands locally in the following steps as that will work for most people. You could also create a virtual machine and manage that using Ansible.

Our Ansible Playbook

Lets start by creating our Ansible playbook script and call it `build-kernel.yaml` with the following contents:

```
---
- hosts: localhost
  vars:
    code_path: /home/ubuntu/linux/
  tasks:
    - name: Update System
      become: yes
      apt: upgrade=yes update_cache=yes
...
```

Here the first line `---` and the last line `...` are conventions of the YAML format, and not specific to Ansible. YAML is a text format for representing data like XML or JSON, but we won't delve much more into it here. The Wikipedia page on YAML is a good introduction to the format.

What we see here, is a playbook with one task. This task has a name of `Update System`; this is what will be shown in the terminal when this playbook is run. The actual task here is called `apt`, which is the name of the package manager on Debian, and Debian-derived versions of Linux like Ubuntu and Mint. The `become: yes` part of this task is to ensure that this command runs as the superuser.

If you're not using a Debian-based distro, you should probably omit the above task, and replace `apt` with `package` which works on most distros. There are also support for distro/language/framework-specific package managers like `yum`, `zypper`, `pip`, `gem`, `npm` and more.

What we also see is the declaration of one variable, the code path. This is where we will keep the source code. This allows us to write this path once, and reuse it wherever else needed.

We can now quickly add two more tasks that install the build tools and git:

```
- name: Install build tools
  become: yes
  apt: name=build-essential state=present
- name: Install git
  become: yes
  apt: name=git state=present
```

Here, we are providing two parameters, a package name, and a state. This will result in

these packages being installed if not already present. Now that our software is installed and updated, let's get the kernel source code:

```
- name: Updating Linux Kernel source code
  git: repo=https://github.com/torvalds/linux
  dest={{ code_path }}
```

This task is simple enough. We are using the `git` command, and providing it a repository location and a destination to place the source code. The magic of this task is that not only will it clone the repository at the supplied destination the first time it is run, but it will also keep it up-to-date during subsequent runs.

Note how we're using the `code_path` variable to supply the code path instead of writing that path all over again. Putting a variable name in double curly braces will tell Ansible to place its value there. We could likewise create a variable that points to the code repository, which would allow easy switching between GitHub and Kernel.org or yet another location.

Now we can combine all the rest of the build commands into one task:

```
- name: Compiling kernel
  shell: make mrproper && make def-
  config && make -j4 && tarxz-pkg
  chdir={{ code_path }}
```

This will launch the build process in a shell.

Unfortunately, the above command can be quite wasteful. If we add the above command to our tasks it will run each time, and end up recompiling the kernel even if there have been no updates. It would be better if we could just run this task if the kernel has been updated.

As it turns out, this is quite simple! All you need to do is to move the compilation task out of the tasks list and into another section called `handlers`. Then the `git` command can be configured to notify the compile command, so it will only run if there is an update. Here you can see the relevant bits of code:

```
---
- hosts: localhost
  tasks:
  ### Other tasks...
  - name: Updating Linux Kernel source code
```

```
  git: repo=https://github.com/torvalds/linux
  dest={{ code_path }}
  notify:
  - Compiling kernel
  handlers:
  - name: Compiling kernel
    shell: make mrproper && make def-
    config && make -j4 && make tarxz-pkg
    chdir={{ code_path }}
  ...
```

Now that the playbook is complete, you can run it with Ansible as follows:

```
ansible-playbook build-kernel.yaml -i hosts -c local
```

Here `-i hosts` tells the `ansible-playbook` command to use the inventory of hosts in a file called `hosts` in the directory in which the command is being run. You may wish to change this if your inventory file is elsewhere or named differently. The `-c local` bit of the command is to be used if you want to run the commands on your own local machine rather than over SSH. Remember to omit that if you are using a remote server.

Here we've only looked at the `apt`, `git` and `shell` modules. Ansible has hundreds of modules for everything from creating users, to sending SMS notifications using Twilio. You can find out about all the command modules included with Ansible here <http://dgit.in/AnsibleDoc>.

Conclusion

Using any configuration management tool at all is a HUGE advantage over using none. Unlike some other tools it does not need to be installed on the remote server. All it needs on the remote server is Python 2, and in some cases not even that. It connects to the remote server using simple SSH and transfers scripts that run your tasks.

The initial process of learning how to create playbooks and getting everything just right can be daunting, but once you have a working playbook, setting up a server with everything up and running becomes a matter of executing a single command.>

You can find out more about Ansible at <http://ansible.com>

*Links Inventory



*Semaphore

>>> Semaphore is a free and open-source alternative to Ansible Tower, the commercial and expensive web UI for Ansible.

dgit.in/semaphore

ANSIBLE TOWER

/ SYSTEM TRACKING
/ REMOTE COMMAND EXECUTION
/ SUPPORT FOR OPENSTACK
/ STREAMLINED UI

*YAML Syntax

>>> If you want a quick introduction to YAML in the context of Ansible, you can find it in Ansible's own documentation here.

dgit.in/YAMLSyntax



*Vagrant and Ansible

>>> If you use Vagrant then you'll be glad to know that Vagrant and Ansible work well together. Check the documentation here.

dgit.in/AnsVagrant

Mini PCs

Tiny form factor computers are resurging as a category. We analyze some of the top contenders.

Bazaar

The latest and greatest consumer products thoroughly tested and reviewed monthly

MINI LAPTOPS: SMALL SIZE, SMALL PRIZE?

From Chromebooks to low-powered Windows alternatives, sub-20k small form factor laptops are a resurgent trend in the market. Are they worth buying?

Prasid Banerjee
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The push towards mobile, shrinking form factor devices has been evident and in full flow for a while now, but no matter what the tech gurus of the world say, laptops don't seem

to be dying fast enough. New developments take place all the time though, and inexpensive netbooks giving mobiles a run for their money. With Google pushing its Chromebooks more aggressively in India, Windows OEMs have suddenly taken to building low cost, Chromebook like laptops that seem to make a

lot of sense. These laptops cost less than ₹20,000 and rely mostly on cloud storage for functionality. And like anything in India, when the price is low, people are interested.

The question though remains as to whether these laptops are actually worth spending money on. After all,

you don't want to buy a device simply because it doesn't cost a lot of money, only to find that you made the wrong decision buying what you bought. To bring the pricing down, companies have had to make sacrifices that may not suit a lot of users. So, without further ado, here's how things stand.

HOW WE TESTED

Remember netbooks? Like a phoenix rising from the ashes, they refuse to die out. These laptops are aimed at bringing back the netbook form factor, but with a more mobile-like experience. So, we tested them the same way. It's evident that these devices are meant for the basic users, which means functionality is limited. We took one Chromebook (Xolo Chromebook) and three Win-

dows 10-based devices, namely, the Asus E402M, the Micromax Canvas Lapbook and the Acer Aspire ES 1.

We started out with two trusted benchmarks in SunSpider and Browsermark. Both these browser-based benchmarks employ various CSS, Javascript and other tests to determine what kind of browsing performance you can expect from a particular

device. Given that these laptops are cloud based and want to stay connected all the time, this is an important parameter.

Next, you'll most likely be browsing and watching movies on these devices, which means that the battery life is of utmost importance. Here, we broke up the battery life tests into two different parts. The first includes testing the battery when you're simply playing a 1080p movie

local to the device. The second test though is more important and includes the time these laptops can spend streaming videos online. Given the low storage space on these PCs, this matters.

We also tested the storage I/O speeds, data transfer speeds, and more. Further, we inspected the keyboards, touchpads, displays and the overall design of the devices to determine their usability as well.

**Are you Sherlock'd?**

BBC has hired a firm to use AI to track Sherlock fans across the world
<http://dgit.in/SherlockAI>

**e-Sports gets a boost!**

EA plans to establish a e-Sports division to create competitive experiences with games
<http://dgit.in/EAsports>

**PERFORMANCE****MICROMAX LAPBOOK** (₹13,999)

If you scoffed at the fact the Micromax is selling laptops, then the Canvas Lapbook will surprise you. While the device is of course not a hardcore performer, it'll suit basic users just fine. In terms of general performance, the Lapbook lets you continuously stream videos (between 480-720p) on it for over six hours, which is good for a laptop in this price range. Even while playing videos from the device's hard drive, the Lapbook can last for 6+ hours, which means you can get quite a bit of work done on the battery.

The Lapbook's downfall, as mentioned in the features section is that it doesn't come with any additional storage offers. In addition, the ASUS E402MA can perform slightly better than the Micromax Canvas Lapbook and is much better built. The area where the Lapbook really lacks though is in its display, which is sub-par to say the least. Still worth considering for first time, basic users.

XOLO CHROMEBOOK (₹9,999)

The XOLO Chromebook actually works quite smoothly and offers battery life that is better than the Micromax Canvas Lapbook. The device can go over eight hours when it comes to native video playback, while online streaming can be done continuously for over 7.5 hours. In terms of battery life, the XOLO Chromebook is undoubtedly the best out of the lot. At 10k, no other laptop that can provide this kind of battery life. If you're simply browsing and typing, this Chromebook would even last for 10 hours.

The Chromebook's weakness though is in the fact that it has no apps. While Chrome OS isn't the most difficult to learn and understand, the app support on Google's Chrome Web Store is really little right now. The Chromebook fits the bill for basic users, just like the Micromax Canvas Lapbook, but it needs a lot of work before we can adopt the always-online ecosystem of Google.

ACER ASPIRE ES1-131 (₹18,500)

The Acer Aspire ES1 lags one too many times at basic tasks, like clicking on Cortana to search for something. Of the four devices that we used, this one lagged the most and the fact that its keyboard is too cramped made it quite painful to use. While browsing on Google Chrome, we could hardly multi-task with a heavy website open in some tab.

It's actually quite sad, considering that the ES1 is the only laptop that gives the kind of storage that we wish to have on such devices. The 500GB HDD and 100GB of Drive storage would have been perfect for users like us, but the ES1's performance isn't quite up to the mark. That, when combined with the fact that the ES1 also costs nearly ₹2k more than the Asus E402MA, makes the E402MA a better laptop to buy.

In addition, the laptop also lacks in terms of battery life when compared to the other three that we chose.

ASUS EEEBOOK E402MA (₹16,990)

The ASUS E402MA is definitely the best performer amongst all of these laptops. It costs less than the Acer Aspire ES1 and provides over seven hours of battery life on streaming. In addition, its display is also the best in terms of contrast, colour reproduction and other elements. The device has a larger 14-inch display to boot and is priced at only ₹17k. If you're buying a laptop in this price range, then chances are you'll appreciate the bigger display and better build quality.

While the E402M does have the same processor as the Aspire E11, its performance is much better and the laptop seems much more prepared for Windows 10, which of course comes out of the box on this device. It doesn't lag as much and provides a comparatively seamless usage experience. If you have a budget above 15k, but below 20k, then this is the laptop that you should be going for. Hands down!

Benchmarks

BrowserMark.....	1324
Sunspider.....	914
Battery (Video).....	6.6 hours
Battery (Streaming).....	6.5 hours
Screen Quality.....	7 / 10
File copy.....	274 sec

Benchmarks

BrowserMark.....	2463
Sunspider.....	658.4
Battery (Video).....	8.3 hours
Battery (Streaming).....	7.5 hours
Screen Quality.....	6.2 / 10
File copy.....	230 sec

Benchmarks

BrowserMark.....	510
Sunspider.....	889.6
Battery (Video).....	5.8 hours
Battery (Streaming).....	5.2 hours
Screen Quality.....	6.2 / 10
File copy.....	61 sec

Benchmarks

BrowserMark.....	1037
Sunspider.....	800.3
Battery (Video).....	7 hours
Battery (Streaming).....	6 hours
Screen Quality.....	7.4 / 10
File copy.....	144 sec



Podcast 101

Ever wanted to get started on Podcasts? Here's the perfect guide!
<http://digit.in/Podcast101>



Yahoo Messenger is back!

Yahoo relaunched its messenger app with several integrations from all the acquisitions it had made.
<http://digit.in/YahooMsg>

Laptops under ₹20k



FEATURES

MICROMAX LAPBOOK

The Canvas Lapbook has two USB 2.0 ports, an HDMI port, a 3.5mm headphone jack and a micro-SD slot. Like most others in this price range, the laptop has 32GB of internal storage (19GB usable), but is expandable to only 64GB using the micro-SD card slot.

The Lapbook runs on an Intel Atom Z3735F quad-core processor, clocked at 1.83 GHz and has 2GB of DDR3 RAM. It has an 11.6 inch HD (1366x768p) IPS display, but the viewing angles are still quite poor for an IPS panel. There's also a VGA camera on the device.

What the Lapbook lacks is additional cloud storage. You can of course use OneDrive, Dropbox and any other cloud service that you want to, but there's no additional free cloud storage with this device, a downer for a laptop that is basically a Chromebook that runs on Windows. This device doesn't have enough of a unique appeal in its features.

XOLO CHROMEBOOK

Buying a XOLO Chromebook on the other hand provides you with 100GB of free Google Drive storage, which you can use for documents, movies, sheets and more. Unfortunately though, 16GB of internal storage on the XOLO Chromebook is abysmal. It's also only expandable to 64GB using the micro-SD card slot.

Like the Lapbook, the Xolo Chromebook also has two USB ports and an HDMI port, accompanied by the 3.5mm headphone jack. It runs on a 1.8GHz Rockchip RK3288 quad-core processor along with 2GB of DDR3 RAM. Unlike the Lapbook though, the camera here lands at 1 megapixel, which may matter to some.

It goes without saying though, that the XOLO Chromebook depends on Google Services, which means if you're not a fan of those, stay away. Another problem with the OS is the scarcity of apps that matter.

ACER ASPIRE ES1-131

If you want big storage options in this price range, then the 500GB HDD on the Acer Aspire ES1 is probably the only choice for you. There's also 100GB of Drive storage to boot. In addition, the device has an SD card slot, one USB 3.0 and one USB 2.0 port, an HDMI port and even a LAN port on the back. The display of course stands at 11.6 inch 1377x768p HD display, like the others in this comparison.

While all that is definitely good for the Aspire ES1, the device runs on a 2.16GHz dual-core Intel Celeron N2840 processor and 2GB DDR3 RAM and it doesn't perform as well as the others. In addition, the device has a comparatively small 2670 mAh battery and that hurts it quite a bit.

The Acer Aspire ES1 is also the most expensive amongst the device in this price range. The device costs around ₹18.5k, which is more than all of the other laptops used in this comparison.

ASUS EEEBOOK E402MA

The E402MA once again is quite impressive in this department. While the device has the same processor and RAM as the Acer Aspire E11, it performs better. In addition, ASUS has packed in 25GB of storage on Dropbox and its own ASUS WebStorage facility into the laptop. Combined with your own Google Drive and OneDrive storages, it makes for a pretty tidy cloud support option.

In addition, the E402MA has a 14-inch HD (1366x768 pixel) display, which makes it better for watching movies, browsing and other activities. The display though is not the best when it comes to viewing angles. It also has one USB 2.0, USB 3.0 port each, like the Acer device, and more I/O ports.

Of course, the ASUS E402MA's strength is in the fact that it has a larger display than the others, while being cheaper than the Aspire ES1, at ₹17k. A win-win on both counts.

Specifications

Display.....11.6-inch, 1366x768 IPS
CPU.....1.8 GHz Intel Atom Z3735F
RAM.....2GB DDR3
OS.....Windows 10
Ports.....USB 2.0, HDMI, micro-SD
Weight.....1.3 Kg

Specifications

Display.....11.6-inch, 1366x768 IPS
CPU.....1.8GHz Rockchip RK3288
RAM.....2GB DDR3
OS.....Chrome OS
Ports.....USB 2.0, HDMI, micro-SD
Weight.....1.5 Kg

Specifications

Display.....11.6-inch, 1366x768 IPS
CPU.....1.6 GHz Intel Celeron N2840
RAM.....2GB DDR3
OS.....Windows 10
Ports..USB 3.0,2.0, HDMI, SD Card
Weight.....1.2 Kg

Specifications

Display.....14-inch, 1366x768 IPS
CPU.....2.16 GHz Intel Celeron N2840
RAM.....2GB DDR3
OS.....Windows 10
Ports..USB 3.0,2.0, HDMI, SD Card
Weight.....1.45 Kg



New Google Glass?

New patent filings point to a revised version of the Google Glass
<http://dgit.in/GogIGlass>



LinkedIn apps redesigned

LinkedIn redesigns its mobile apps, which are now available for download from the app stores for Android and iOS <http://dgit.in/LinkedInReD>



DESIGN

MICROMAX LAPBOOK

The Lapbook looks quite pedestrian, which many may not like. It weighs 1.3kg, which may be a tad heavy for some, but its small size makes the device quite easy to carry about. Considering the fact that none of its competitors are much lighter, we don't quite hold the weight against this device.

The laptop is built sturdily, with no creaks anywhere. But the plastic body feels much less premium than most others present in the lineup.

XOLO CHROMEBOOK

As a budget product, the matte plastic on this laptop looks quite good, but raise the lid and you see a glossy plastic panel around the keyboard, which is prone to both smudges and dust. The glossy plastic inside is really a downer.

The XOLO Chromebook's keyboard though is not meant for long term usage. In our unit, the keys make that creaking sound often and hamper the typing experience. The keys are also wobbly.

ACER ASPIRE ES1-131

This device carries a really old school design, which some may like, but it looks dated today. It's also thicker than the other three laptops in this comparison. This in turn makes the device feel bulkier, even though it weighs 1.2 kg, pretty much the same as the XOLO Chromebook (1.5 kg) and the Micromax Canvas Lapbook.

The use of plastic also continues here and the ES1 actually feels somewhat like the XOLO device.

ASUS EEEBOOK E402MA

Amongst the laptops in this comparison, the E402MA is by far the best looking and best designed of the lot. So much so that we don't mind the bigger size and footprint. Of course, the fact that the device has a 14 inch display plays a big role in that.

The E402M though makes the right use of plastic. It's slightly heavy, but its metallic finish makes the laptop look much more premium than any of its competitors. Its full-sized keyboard aids typing.

VERDICT

The ASUS EeeBook E402MA is the undeniable *Best Performer* of this bunch, while the Xolo Chromebook bags the *Best*

Buy Award. Having said that, while our tests do show that the Asus E402MA is the best performer amongst the lap-

tops that we tested, the answer to the question we asked at the beginning remains. Does it make sense to spend on

these laptops or would you make a better investment buying a slightly more expensive laptop with more features and better performance?

The ASUS E402MA, which is the best performer in this test, still lags in the face of traditional laptops. All of the laptops in the test feel like devices that were meant to be tablets, but have been modified to meet user demands. Yes, your parents, who perhaps only use the laptop for browsing online, will find these useful, but for most of us, it makes more sense to invest in a slightly more expensive laptop, that lasts longer and performs much better. **d**



ASUS E402MA

PROS:

- Good performance
- Good looks and build
- Cloud backup
- Screen quality
- Keyboard and touchpad

CONS:

- Large size



XOLO CHROMEBOOK

PROS:

- Battery life
- Built-in Google services
- Cloud backup
- Inexpensive

CONS:

- Restrictive OS
- Not enough apps



ACER ASPIRE ES1

PROS:

- USB 3.0, features
- Lightweight
- Fast-paced, large hard drive
- Cloud backup

CONS:

- Battery life
- Look and feel



Tap to Translate

You can now use Google's Tap to translate feature to translate within apps as soon as Q1 2016 in India. <http://dgit.in/Tap2Trans>



Marshmallow'd

Moto X 2014 gets updated to Marshmallow in India. Did you get yours? <http://dgit.in/MotoXdroidM>

Mini PCs

THERE'S A MINI-PC FOR EVERYONE AND WE TAKE A LOOK AT SOME OF THE BEST ONES IN THE MARKET.



MSI Cubi 008-BEU



GB-BXi5H-5200

MINI
MIRACLES



ECS LIVA Core



ASRock Beebox N3150

Mithun Mohandas
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The Mini-PC market is slowly saturating with devices of every size and feature set within the domain that would qualify them as a Mini-PC. You have the credit card sized ones like the LIVA Core from ECS which are powered by an

Intel Core M 5Y10c and, on the other end of the spectrum you have the ZOTAC Magnus EN970 which has an Intel Core i5 - 5200U making it a lot more powerful. However, putting both of them in the same bucket is a little unfair on the little ones. After all, they put a lot more effort in squeezing in all the components within a smaller footprint. So we

decided to class them apart. We'll be taking a closer look at the ZOTAC Magnus EN970 and the ASUS GR8 which occupy about four times the volume, and thereby, can squeeze in a lot more powerful components. Also, comparing a machine that costs ₹9,000 with another that costs ₹80,000 is not only unfair but also outright silly.

This leaves us with the ASRock Beebox, MSI Cubi, ECS LIVA Core and the Gigabyte GB-BXi5H-5200. All four are small form factor machines with a variety of hardware for all kinds of usage scenarios. While this isn't an exhaustive comparison, you should be able to find some connect between the specifications of one of the competitors with what you hope to buy.



Embrace the bump

This amazing comic illustrates how an iPhone should not be judged by a cover.
<http://dgit.in/iPhoneBCover>



Bitcoin Inventors unmasked?

Gizmodo claims to have uncovered the inventors of bitcoin, who were arrested immediately after the story broke
<http://dgit.in/BitcoinInvent>



FEATURES AND BUILD QUALITY

GIGABYTE

Brix GB-BXi5H-5200

Price - ₹27,299

Surely the Mini-PC with the beefiest hardware among all the competitors in this test. The Gigabyte Brix GB-BXi5H-5200 is powered by an Intel Core i5 5200U which is commonly used in laptops. The 15 W Broadwell processor is not only clocked at the highest among all, but the on-chip IGP is also the highest clocked with the most number of execution units. It also happens to be one of the two Mini-PCs in this comparison with 4K playback capability.

It has a sleek exterior and is relatively heavier once fully setup but not too much to be an inconvenience. On the inside, the construction is a testament to the durability that Gigabyte has been known for. Moreover, the components are well spaced and, the HDD and the CPU are well ventilated.

ECS

LIVA Core

Price - ₹34,499

Terrribly close on the heels of the LIVA X comes the LIVA Core. ECS has maintained the same build quality with the LIVA Core as was the case with the LIVA X. It has the second most powerful processor in this comparison test and an equally powerful IGP to go with it. Moreover, it offers more value for money since it comes pre-loaded with an Intel 535 series 120 GB M.2 SSD and RAM. This does allow for greater quality control and removing user intervention from the equation is a plus point for those who want a plug and play device.

The body is made out of one solid piece of metal and it scores high in the looks department. Another plus point is that it has a massive heatsink that gels well with its external appearance. It is essentially, one huge heatsink.

MSI

Cubi 008-BEU

Price - ₹8,500

And with the MSI Cubi, we're looking at an entirely different price segment. This is the sub-10K range entry level range. Most devices in this bracket are barebones and have a ULP SoC at their heart. In this case, the MSI Cubi has an Intel Celeron N3205U and the on-chip IGP isn't spectacular. But these devices weren't meant for an all round usage scenario. It's mostly office work and media consumption that suit this device.

When it comes to build quality, one would assume that there will be certain compromises made. While it doesn't match up to the LIVA Core, it isn't flimsy by any means. The chassis is made out of plastic and metal. The extra base plate is a welcome addition and PCB on the inside is easy to remove and clean.

ASROCK

Beebox N3150

Price - ₹9,649

Right behind the MSI Cubi is the ASRock Beebox powered by the Intel Celeron N3150. This quad-core Braswell SoC is clocked slightly higher than the Cubi's 3205U and that gives it a slight advantage. This particular Beebox is the only one with a USB Type-C port and has 2 HDMI and a Display port. This makes it the only unit capable of running three displays simultaneously. Also, this was the only model that came with a media centre remote which made it a little more of an attractive HTPC option.

Like the Cubi, the Beebox also makes use of a plastic and metal combination for the chassis. And disassembly is quite simple as well. Scratches on the light coloured chassis are really visible but then again, you can opt for a darker shade.

Specifications

CPU Intel Core i5 5200U
GPU Intel HD 5500
RAM 16 GB (Not included)
Storage (Not included)
Audio ALC283
OS (Not included)
Weight 0.50 Kg
USB 4x USB 3.0
LAN Gigabit Ethernet
Misc Display Port

Specifications

CPU Intel Core M-5Y10C
GPU Intel HD 5300
RAM 4 GB
Storage Intel 535 120 GB SSD
Audio On board
OS (Not included)
Weight 0.58 Kg
USB 4x USB 3.0
LAN Gigabit Ethernet
Misc MicroSD Card slot

Specifications

CPU Intel Celeron N3205U
GPU Intel HD Graphics
RAM 16 GB (Not included)
Storage (Not included)
Audio On board
OS (Not included)
Weight 0.58 Kg
USB 2x USB 3.0, 2x USB 3.1
LAN Realtek 8111G Gigabit
Misc Multiple base plates, Mini-DP

Specifications

CPU Intel Celeron N3150
GPU Intel HD Graphics
RAM 16 GB (Not included)
Storage (Not included)
Audio ALC283
OS (Not included)
Weight 0.58 Kg
USB 4x USB 3.0
LAN Realtek 8111GR Gigabit
Misc USB Type-C, Display Port



Guts and glory?

Watch the most talked about Swagway taken apart to see what's inside after the controversies.
<http://dgit.in/hvrbrdInside>



Jabra Sports Pace launched

Jabra launches its new bluetooth enabled Sports Pace earbuds and is also compatible with it's Jabra Sport Life app.

Mini PCs



PERFORMANCE

GIGABYTE

Brix GB-BXi5H-5200

When you to make a transition from a laptop or a more powerful form factor, you'd feel at home with the Gigabyte Brix. The Intel Core i5 5200U pretty much aces all the benchmarks with this particular unit scoring the highest in all benchmarks. The on-chip IGP is sufficiently powerful to crunch out approximately 30 FPS in quite a few games with minimal reduction of graphics settings.

While the device isn't made for hard-core gaming like the MAGNUS EN970 and the ASUS GR8, you still can get away with a fair amount of gaming.

All units compared in this test use the same Intel 3160NGW 802.11ac Wi-Fi module, so a performance difference in that aspect is out of the question. All that's missing is a USB 3.1 connector and this'd be untouchable.

ECS

LIVA Core

And then there's the ECS LIVA Core which turned out to be the second highest performer in the comparison test. The Core M-5Y10c is slightly older than what the competing products are powered by but it is also the one with the lowest TDP making the LIVA Core relatively cooler. This is why it's the only one using passive cooling effectively. And less moving parts bodes well since the LIVA Core is a little difficult to disassemble.

The Intel Core M5Y10c's HD 5300 being a generation older doesn't perform as well as the rest so it ended up scoring the least in all gaming benchmarks. Overall, it more than compensates for this by scoring second highest in all computing benchmarks. The Intel 535 Series 120 GB SSD gives it one of the best storage characteristics as well.

MSI

Cubi 008-BEU

Regrettably, this particular CUBI scores the least in our compute benchmarks but that doesn't make it a bad investment. It is designed for office productivity and casual multimedia consumption. And it performs these tasks without any hiccups.

It's gaming performance can be said to be a glimmer of sunshine as it does perform better than the LIVA Core and happens to be the second highest performer overall in graphics benchmarks. So if you turn down the graphics settings all the way down, then you can manage playable FPS rates.

Internally, it's cooling capabilities also happen to shine through. It has an active heat-sink with a dedicated heat-pipe which helps bring down temperatures after bursts of high performance runs.

ASROCK

Beebox N3150

Standing out from the crowd for implementing features that are very premium in an economy segment price bracket is the Beebox N3150. However, in an attempt to be the jack of all trades – which it is – it takes a few steps back in almost all departments. It's compute performance pegs it at third position in this comparison and its graphics performance pegs it at third as well.

Casual gaming is all you should expect from the Beebox N3150. But like we said, it has managed to squeeze in 4K playback on one display or power three separate displays simultaneously. Overall, its performance is just a little ahead of the MSI Cubi but with the amount of features that ASRock have managed to pack in, the Beebox does manage to be the jack of all trades in this comparison.

Benchmarks

PCMark8 Home.....	3049
PCMark8 Creative.....	3535
PCMark8 Work.....	4016
3DMark Cloud	
Gate.....	5345
3DMark Sky Diver.....	2864
Cinebench 15.....	28.03 FPS
WinRaR.....	3854 KB/s
Unigine Heaven.....	245 FPS
RE6 Score.....	2183

Benchmarks

PCMark8 Home.....	2194
PCMark8 Creative.....	1003
PCMark8 Work.....	3343
3DMark Cloud	
Gate.....	2229
3DMark Sky Diver.....	1069
Cinebench 15.....	12.89 FPS
WinRaR.....	2514 KB/s
Unigine Heaven.....	46 FPS
RE6 Score.....	912

Benchmarks

PCMark8 Home.....	1482
PCMark8 Creative.....	1604
PCMark8 Work.....	2832
3DMark Cloud	
Gate.....	2638
3DMark Sky Diver.....	1617
Cinebench 15.....	19.95 FPS
WinRaR.....	1583 KB/s
Unigine Heaven.....	FPS
RE6 Score.....	1380

Benchmarks

PCMark8 Home.....	1684
PCMark8 Creative.....	1884
PCMark8 Work.....	1323
3DMark Cloud	
Gate.....	2266
3DMark Sky Diver.....	1222
Cinebench 15.....	14.17 FPS
WinRaR.....	1564 KB/s
Unigine Heaven.....	85 FPS
RE6 Score.....	985



HOW WE TESTED

Initial setup: All Mini-PCs were assembled and the same hardware was used where ever possible. We used Kingston's Impact RAM clocked at the highest any Mini-PC would allow. The DIMMs themselves were capable of going all the way to 1866 MHz. For the SSD we used the ZOTAC Premium Edition 240 GB so as to maintain a level playing field. The LIVA Core comes pre-installed with an Intel 535 Series M.2 SSD, so we let that be. We then installed Windows 10, all drivers and essential software along with the requisite benchmarking software were installed. We

then proceeded to install all Windows updates and set the *Windows Power Plan* to a custom *High-Performance* preset.

During the assembly phase, we took a look at the internals to assess the build quality of each competitor.

Performance tests: Our benchmark software suite consists mostly of industry standard tools like PCMark8, 3DMark 8, Cinebench, POVRay etc. We also throw in a few storage benchmarks, like ATTO and WinRaR. While we did use the same hardware for all Mini-PCs, the storage test was basically used to re-affirm

that the assembly was done and all storage devices were performing equally across all Mini-PCs.

Features score: The features that were unique to each Mini-PC garnered it the same weightage as any other. This ensures that having something unique did not propel any device to such an extent that the others couldn't catch up.

Build quality: The metrics that we observe are largely based on what we've seen before and that makes build quality a subjective score. However, the parameters are still based on common sense.

Final score: The final score that we arrive at in the performance tests is what decides which Mini-PC becomes the *Best Performer*.

The feature score is used to aid in picking the best buy, so the device with the highest performance/rupee ratio clubbed with the feature score gets to be the *Best Buy*.

The *Editor's Pick* is awarded to whichever device that we feel has narrowly missed out on either the Best Performer or the Best Buy. This does make it a little subjective but the scoring mechanism is largely rooted in how the device scores overall.

VERDICT

The *Best Performer Award* goes to the **Gigabyte Brix GB-BXi5H-5200**. It really was the processor that pushed this little beast ahead of the competition. Club that with a really good build quality and you've got a winning formula. This does come at a price through,

and you need to pay a lot more if you want to the RAM and hard drive included. Swapping it out for an SSD to get the extra edge pushes the cost ever further into the mid 40K. But you really do get your money's worth of performance with the Gigabyte Brix GB-BXi5H-5200.

The *Best Buy Award* goes to the **ASRock Beebox N3150**. This nifty little device packs in top of the mill features in the budget category which makes it an attractive option. The fact that it performs quite well for the tasks that it was designed to only works in its favour. For less

than ₹10,000 there can hardly be a better option. However, the MSI Cubi which very narrowly missed out on this award is also equally good and a little cheaper. So if three display connectors and a USB Type-C don't tickle your fancy, you best go with the MSI Cubi.

The *Editor's Pick Award* goes to the **ECS LIVA Core** and that too for quite a lot of reasons. Firstly, none of the others come anywhere close in terms of build quality. And it's process is the second best performing in our test so you aren't exactly making a compromise there either. And it even has a MicroSD slot and a high current always on USB 3.0 port makes it an all-rounder of sorts.

While this was a fairly small comparison, the Mini-PC category is bursting at the seams and you'll soon see a lot more reviews coming your way in the coming months.



ASROCK

Beebox N3150

Price - ₹9,649

PROS:

- Value for money
- Multimedia Remote
- USB Type-C

CONS:

- Moderate build quality
- Glossy finish prone to scratches



GIGABYTE

Brix GB-BXi5H-5200

Price - ₹27,299

PROS:

- High performing CPU
- Moderately clocked IGP
- Actively cooled heat-sink

CONS:

- Could have better placement of ports



ECS

LIVA Core

Price - ₹34,499

PROS:

- Low power SoC
- Excellent build quality
- Effective passive heatsink

CONS:

- Low graphics performance
- Lack of availability

डिजिट अब हिंदी में

देश का सबसे लोकप्रिय और विश्वसनीय टेक्नोलॉजी वेबसाइट डिजिट अब हिंदी में उपलब्ध है। नयी हिंदी वेबसाइट आपको टेक्नोलॉजी से जुड़े हर छोटी बड़ी घटनाओं से अवगत रखेगी। साथ में नए हिंदी वेबसाइट पर आपको डिजिट टेस्ट लैब से विस्तृत गैजेट रिव्यू से लेकर टेक सुझाव मिलेंगे। डिजिट जल्द ही और भी अन्य भारतीय भाषाओं में उपलब्ध होगा।

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डिजिट

Bazaar

THE LATEST PRODUCTS REVIEWED FOR YOU

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests and is finally given a score. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and, in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score

- 
Extremely poor product.
Keep away!
- 
Strictly OK.
Not recommended
- 
Decent product.
Go for it, but there may be better products out there.
- 
Very good product.
Highly recommended.
- 
Ground-breaking product.
We've never seen anything like it before.
A definite must buy!

Page 86 ▶
ASUS ZenPad 7.0



◀ Page 87
Yu Yutopia



Page 88 ▲
ECS Z170 Claymore



▲ Page 89
Videocon 40-inch
DDB TV



▲ Page 90
ZOTAC 240 GB
Premium Edition



▲ Page 91
Kingston Impact
SODIMM RAM

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INTO LIFE!



Get your mail on email

USPS is rolling out a new service, which will send you an image of your mail through email, so there aren't any surprises in your mailbox. <http://dgit.in/emailmail>



One Ring to rule them all...

Mozilla launched an ad-blocker for iOS called Focus, which ironically isn't allowed to work with Firefox for iOS. <http://dgit.in/MozillaFocus>

Bazaar

Sony RX100 IV

The tiny imaging legend

The Sony RX100 IV presents itself as one of the smallest compact cameras, with extensive manual controls and great image quality. It is made of good quality metal, with a single rubber thumbstrip. Buttons are neatly laid out, and the concealment of the electronic viewfinder and the flash module are well thought out. It is light, and coupled with wrist suspender hooks, should take care of no hand grip on the body.

It has a new 1-inch Exmor RS sensor, maximum continuous shooting rate has increased to 16fps, and the electronic shutter can shoot at up to 1/32000 seconds. Another notable upgrade over previous generations is 4K video shooting. The NP-BX1 battery pack, with battery stamina of 1240mAh, is rated to last for 280 shots. The electronic viewfinder now has a resolution of 2.36 million pixels, in place of 1.44 million pixels on RX100 III. The Sony RX100 IV does not feature a hot shoe that was last seen on the RX100 Mark II, owing to the built-in flash module and the pop-up electronic viewfinder. The Zeiss Vario-Sonnar T* 24-70mm f/1.8 lens remains the same – and is great. It has a limited range which may pose a few problems, but is compact, and fast.

The electronic viewfinder on the RX100 IV is sharp, accurate, and shifts actively between the live view display and itself, with the help of a proximity sensor. In terms of shooting capabilities, the RX100 does miss the power of interchangeable lenses that compact-body mirrorless cameras have, but within the compact shell, provides complete manual control over photographs. Focusing manually is smooth with the EVF, and while the autofocus mechanism works when the subject is in extreme closeup range, it fails to lock focus, even when the subject is stationary.

Shutter speeds range from 30" to 1/2000" (mechanical) and 1/32000 (electronic). The lens ranges between f/1.8 to f/11. At f/1.8, images have a certain amount of distortion, and at f/11, there is softening on the edges because of light leaking through the iris. However, the 1-inch Exmor RS sensor in this tiny device makes it one of the best, or possibly the best compact camera available today. Images in daylight, overcast and indoor (tungsten and fluorescent) look sharp and crisp, and render true-to-source colours while preserving contrast and brightness levels. At dawn or dusk, or while shooting into the light, its excellent dynamic range gets you more details, and good balance of light and shadows.



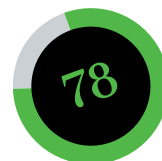
Shooting at objects in shadow with a singular light source in the background gives good levels of detail on the subject, and light sources do not appear overpowering or harsh. This is also useful when you shoot in harsh sunlight, where the shadows in trees or buildings are not completely darkened.

The 4K video recording is smooth, noise levels are reasonably low even at ISO levels of up to 1250, meaning that you can actually use it to shoot videos in poorly-lit situations. The autofocus mechanism does pose a problem here, and I found myself focusing manually more often, which might be a slight deterrent in an otherwise excellent camera which literally fits into trouser pockets. The tiltable LCD display is another benefit, although the presence of touchscreen and the ability to swivel it would have made it even better.

All of this, however, comes at the expense of one thing – battery. The 1240mAh battery pack is weaker than what the Sony RX100 Mark III had, and on regular usage, you will need to charge it halfway through third day of shooting. Approximately, that is about 180 photographs, and 12 minutes of 1080p videos – something that is a major letdown for a pocket device that is otherwise ideal to take around, wherever you go.

The Sony RX100 Mark IV is one of the best compact cameras made till date, providing full manual control and good dynamic range, thus making it a very versatile camera. However, the lack of touchscreen input and a mis-functioning autofocus mechanism means that it has its limitations. The asking price may seem steep, but for such a compact device with great image quality, the RX100 IV makes absolute sense.

Souvik Das



Features	78
Design	84
Performance.....	90
Value	60

Specifications

Resolution: 20.1 million effective pixels, **Sensor size and type:** 1.0-type (13.2 mm x 8.8 mm) Exmor RS CMOS sensor, aspect ratio 3:2, **Lens:** ZEISS® Vario-Sonnar T* lens, 10 elements in 9 groups (9 aspherical elements including AA lens), **Image processor:** BIONZ X, **Viewfinder:** 3-inch Xtra Fine TFT LCD, electronic viewfinder, **Shutter speed:** 1/32000" to 30", **ISO:** 100-12800, **Weight:** 271 grams (body only), **Connectivity:** WiFi

Contact

Sony India
Phone: 1800-103-7799
Email: <https://www.sony.co.in/section/contactus>
Website: www.sony.co.in



Angry Birds CEO steps down

The CEO of angry birds steps down after just one year, giving more independence to the game and media division of Rovio. <http://digit.in/AngryBirdsCEO>



Smart Lockers for packages

QikPod now allows you to collect your packages from smart lockers! <http://digit.in/SecureLockersIndia>

ASUS ZenPad 7.0 (Z370CG)

Not what we'd expect from the makers of a Nexus Tablet

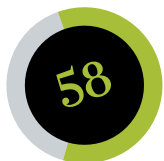


Price
₹11,999

The build of ZenPad 7 is the same that we have seen on other tablets – thick borders surrounding the display. There are no physical navigation buttons on the face of the device. The tablet has the ability to make calls and the call quality from the tablet is good. It also has an audio cover that boasts of

Dolby DTS sound. Sticking with the audio cover, there is only one position in which you can prop the tablet so if you are sitting outdoors and there is direct glare on the device, you will have to change your position rather than that of the tablet. The viewing angles of the tablet display itself are good. For what it boasts, the quality of sound from the audio cover isn't great. When it comes to gaming, the display looks washed out and pixelated in the case of Asphalt 8. Graphically intensive games aren't a great experience on the tablet. ASUS has its own UI skinned over Android. An interesting feature of the UI is that it auto arranges the apps you download into folders if you wish it to do so. Coming to the battery life, the tablet ran for about 6.5 hours in our continuous video playback test. If you are in the market to pick up a tablet for 12K and don't mind compromising on calling capability you can take a look at the Xiaomi Mi Pad which is an overall better performer.

Sameer Mitha



Features	72
Performance.....	58
Design	67
Value	44

Specifications

Display: 7-inch WXGA display with a 1280x800p resolution; **CPU:** Intel Atom x3-C3230 Quad-Core, 64bit; **RAM:** 2GB LPDDR3; **Storage:** 16GB built-in expandable via a microSD card; **Camera:** 8MP rear and 2MP front; **Battery:** 3450mAh battery; **Weight:** 272 grams

Contact

ASUS India
Phone: 1800-2090365
E-Mail: <https://vip.asus.com/VIP2/Services/QuestionForm?lang=en-in>

Micromax Canvas Xpress 4G

Is the addition of 4G enough?

The build of the smartphone is good especially when you compare it to other smartphones in the same price bracket. The curved back feels good and the dark blue colour is attractive. The display has good viewing angles. The downside is that the colour reproduction isn't the best especially when you place the Canvas Xpress 4G next to the Acer Liquid Z530. The UI on the phone is lightly skinned just like the ones we have seen on other Micromax smartphones. For everyday use the phone worked just fine. The call quality was good at both ends. There is a little audio leak from the earpiece at full volume, but I think this could also be because the person I



Price
₹6,599



Features	78
Performance.....	52
Design	68
Value	50

Specifications

Display: 5-inch 720P display; **Processor:** 1GHz MediaTek MTK6735P quad-core processor; **RAM:** 2GB RAM; **Storage:** 16GB built-in expandable via a MicroSD card; **Camera:** 8MP rear and 5MP front; **Battery:** 2000mAh

Contact

Micromax India
Phone: 1860 500 8286
Email: info@micromaxinfo.com

was speaking to was yelling. The speaker is positioned at the back of the phone, which isn't ideal if you place it face up on a table and listen to music. Most games run well, but graphically intensive games will suffer on the device. The battery life the smartphone lasted for about 7 hours in the GeekBench Battery test. The rear camera of the device is average and works if you want to post them on social networking websites.

If you are in the market to pick up a smartphone under 7k, there are a lot of options available that give the Micromax Canvas Xpress 4G a run for its money.

Sameer Mitha



Send your buddies Coal

An Australian startup allows you to send anyone actual coal to show your gratitude (of lack of) this Christmas for just \$14. <http://dgit.in/sendcoal>



One Ring to find them...

Adidas has created a pair of 3D printed shoes made with plastic from Ocean Waste. <http://dgit.in/3DprintShoes>

Bazaar

YU Yutopia

Not quite the utopian wonder

There are few phones in the market that can come close to beating the OnePlus 2 when it comes to the performance to price factor and the YU Yutopia is one of them. The recently launched, self proclaimed, “most powerful smartphone ever”, has a Snapdragon 810 SoC and 4GB RAM, along with a 21MP rear camera, 5.2 inch QHD display and a fingerprint sensor on the back.

The Yutopia's is made completely out of metal, but it isn't the same build quality that you see on HTC and Apple phones. The metallic body feels good, but is prone to dents with the first fall. In addition, the Yutopia's design makes it bigger than it needs to be. While the phone has a 0.3 inch smaller display than the OnePlus 2, it's dimensions are almost the same. The Yutopia is wide, making it quite unwieldy, while the metal body is somewhat slippery as well. It's a good looking phone, but not one that's easy to manage with one hand.

The main issue with the Yutopia though is the buggy UI. Factory shipped software should never carry drastic bugs, but the Yutopia's software is riddled with bugs. At one point, our review unit developed an yellowish tint on the display after we used the Adaptive Display mode. It took a factory reset to solve the issue, leading us to re-download about 15 GB of music, apps and games. There were quite a few other noticeable bugs too, making the phone quite frustrating to use at times.

In addition, the software is also not as well optimised as the OnePlus 2. While the two phones may carry the same SoC, the Yutopia is not as powerful as the OnePlus 2 when it comes to graphics performance. For regular apps etc. though the phone is quite capable of handling them, albeit with bugs popping in here and there. Aggressive thermal control algorithms make the phone's performance in gaming and other such activities lesser than the OnePlus 2, but it's capable of keeping the Snapdragon 810 from heating up abnormally. The hero of the phone is the 21MP camera on the back, which



Price
₹24,999

though a tad slow to focus, takes really good images. The Yutopia's camera desaturates colours in some situations, but mostly takes really nice and sharp images. The camera is especially good at noise reduction in low light conditions and delivers quite bright images in such conditions.

Speaking of good things, the new AroundYu feature is well done. Yu has added a screen on the device, similar to Google Now, OnePlus' Shelf screen and HTC's Blinkfeed. Instead of showing contacts, social networks etc. however, this screen shows a collection of services, ranging from flight bookings to food, cabs and more. It's quite useful, but needs a lot of work from Yu, to take it to its full potential.

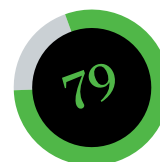
The 5.2 inch QHD display on the Yutopia gives it a big advantage over both the OnePlus 2 and Honor 7's display. Corning's Gorilla Glass makes the display really sharp and vivid, while also adding to the touch experience. The trade-off however is that the Yutopia's display is dim compared to flagship smartphones today.

The battery on the Yutopia is also at the industry average today. The phone can last a power user about 7-8 hours, while more basic users will be able to churn about 12 hours out of the battery.

Lastly, the Little Bird in-ear headphones from House of Marley, come out of the box with this smartphone. The headphones are quite bass heavy and don't do well with the mids and details. If you don't mind spending an extra ₹600, the Cowon EMIs can do a better job than the Little Birds.

Overall, the Yu Yutopia is definitely one of the better phones in the market today. That said, it's hard to recommend a phone that has so many bugs out of the box. If you're fine with trusting Yu to fix the bugs through OTA updates then the Yutopia isn't a bad buy at all, but while the OnePlus 2 is a more powerful device, the Honor 7 is comparable and much more stable. The Yu Yutopia is a good phone, but just like the OnePlus 2, it isn't a flagship killer.

Prasid Banerjee



Features.....	91
Performance.....	82
Value	66
Design	76

Specifications

Display: 5.2 inch QHD;
Processor: Qualcomm Snapdragon 810; **RAM:** 4GB;
Storage: 32GB, expandable to 128GB; **Camera:** 21MP rear, 8MP front; **Battery:** 3000 mAh

Contact

YU
Phone: 1860-212-2122
Email: NA
Website: <http://www.yuplaygod.com>



1 billion free stuff

Creative Commons has revealed that it has more than 1 billion works free for use.
<http://dgit.in/CreativeCommons1billion>

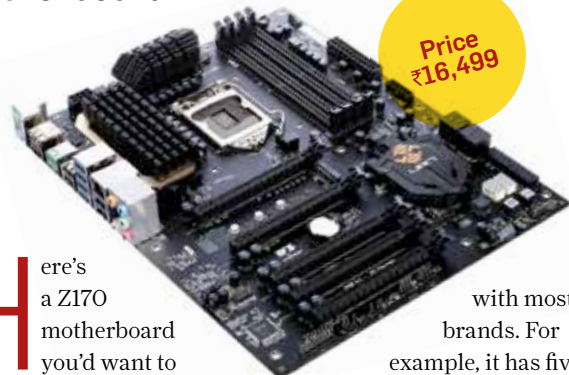


"October 21st, 2015"

The iconic jacket worn by Marty McFly in Back to the Future 2 is up for sale in an auction.
<http://dgit.in/BTTFjacket>

ECS Z170 Claymore

An inexpensive Z170 Gaming motherboard



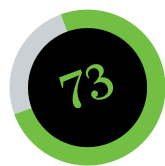
Price
₹16,499

Here's a Z170 motherboard you'd want to consider when upgrading to Skylake. The board itself carries a matte black and gold colour scheme which is very close to what ASRock and ASUS have in its price segment. The components seems quite well dispersed with plenty of space between components. The Z170 Claymore packs in a few premium features that are would ordinarily set prices skyrocketing

with most brands. For example, it has five PCIe slots which aren't all rated for x16 but will run in either x16/x4/x0/x1/x4 or x8/x4/x8/x1/x4 configuration which is sufficient for 2-way SLI and 3-way CrossFireX but this isn't certified for SLI. This wasn't a problem a while back as you could use HyperSLI to trick your motherboard, but that project is no longer active.

Other features include a BIOS debug LED and a new ethernet controller from Realtek. The Dragon 8118AS is Realtek's answer to Killer NIC which so many gaming motherboards come with. It can be argued that Killer's software suite does more harm than good so getting a similar feature set from Realtek is good since competition improves product quality for the consumer. The Z170 Claymore does not come with USB Type-C but instead has two USB 3.1 Type A ports. We'd like to believe two is better than one, so we're more in favour of this design. Also, most phones that have USB Type-C have a Type-A connector at the other end, so this setup is more useful.

Mithun Mobandas



Features	70
Build	75
Value for Money	75

Specifications

Chipset: Intel Z170; **Memory support:** 4x3200(OC)MHz upto 64GB; **LAN:** Realtek Dragon 8118AS Gigabit Ethernet; **Audio:** Realtek ALC1150; **SATA:** 4x SATA III; **Expansion:** 5x PCIe x16(x16/x4/x0/x1/x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years.

Contact

Elitegroup Computer Systems Co. Ltd.
Phone: +91-9820357713,
Email: bhattrajshekhar@ecs.com.tw
Website: www.ecs.com.tw

Vivo V1 Max

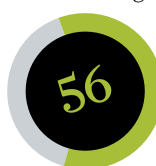
A well build smartphone with average performance



On first impressions, the smartphone feels well build. It has a traditional rectangular candy bar form factor with curved edges and isn't a looker. You won't turn and look twice at this device if you saw it on a table. Overall the design of the smartphone is simple and sturdy. The display is quite reflective. While watching videos, if there were scenes in low-lit situations or in the dark it was difficult to watch on the display. On the other hand, scenes in broad daylight looked good and the viewing angles were average. At a particular angle the display is great but change the angles and you see a colour shift. The resolution of the display is low too considering the



Price
₹21,980
(MOP: ₹14,990)



Features	68
Performance	56
Design	54
Value	49

Specifications

Display: 5.5-inch 720P display;
Processor: Qualcomm Snapdragon 615 chipset Quad-core 1.4GHz & quad-core 1.0GHz; **RAM:** 2GB RAM;
Storage: 16GB built-in expandable via a MicroSD card up to 128GB;
Camera: 13MP rear and 5MP front;
Battery: 2720mAh

Contact

Vivo
Phone: 1800-102-3388
Email: vcare@vivoglobal.com

competition in the same price bracket. The smartphone runs on Android 5.0.2 with the Funtouch OS 2.1 skinned on it. The UI doesn't house an app drawer. Another interesting feature of OS is that there is the traditional drop down notifications menu but like iOS, swiping up from the bottom of the display reveals the brightness settings, recently opened apps other short cuts. Coming to the performance, games ran well on the smartphone and the volume was loud from the speaker. The camera is average at best. Well-lit situation produce good photos for social media and low-lit situations produce a lot of noise. In the GeekBench battery test the smartphone lasted for about 4.5 hours, which is average.

Sameer Mitha



Dress up your OnHub Router

Google has released several shells and also instructions on how to make your own shells for its OnHub router. #EmbraceTheRouter <http://dgit.in/OnHubShells>



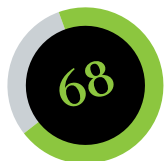
One Ring to bring them all...

FBI has admitted that it uses sting rays and zero day exploits for domestic 'surveillance' in the US of A. <http://dgit.in/FBIstings>

Bazaar

Videocon 40-inch DDB TV

Has a built-in set-top-box, one less remote to worry about!



Feature	75
Design	61
Performance.....	73
Value	63

Specifications

Model: VMA40FH17XAH;
Display: 40-inches (101cm)
1920 x 1080; **Connectivity:**
4x HDMI, 2x USB, 1x PVR,
1x AV in, 1x Yippee in, 1x
Earphone in, 1x RF in, 1x IF
in, 1x Smart card slot.

Contact

Videocon d2h
Phone: +91124-3273091
Email: enquiry@vgmail.in
Website: www.
videoconworld.com

The Liquid Luminous Technology claims to offer more natural colours, a system that reproduces 95 percent of what the eye can actually see. It has non-traditional tri-colored phosphorus LED which increases the colour reproduction range. Visual quality is good, nothing extraordinary, though. The Videocon TV is equipped with Videocon Directly Digital Broadcasting (DDB) technology, which translates to a set top box built inside into the TV. You just need to plug in the RF (antenna) and power cable, voila you are ready to watch your favourite show.

Display brightness is also around 417.16 nits against the claimed 450 nits. The display has a built-in blue filter to reduce the strain on human



Price
₹39,790

eye which actually works. The audio is not so good despite the built-in Seon Sound speakers. If you don't want to miss out on your favorite show, then you can record it via Digital Video Recorder (DVR/ PVR) provided. Just plug in a spare hard disk or pen drive in the DVR port and you're good to go. But recorded content is locked to the TV.

An undeniable positive of this set is just one remote to control TV and built-in Videocon D2H connection. So to access settings with other set top boxes you have to use the hardware buttons. At ₹40k this is an average performing television, with some interesting features. Other options to consider are LG 32LF560T and VU LED43D6535.

Ashish Panigrahi

Lenovo Vibe P1

In pursuit of long battery life



The Lenovo Vibe P1, like the Gionee Marathon M5, has a big battery fitted into it, but the phone doesn't let it be its defining characteristic, putting a little more emphasis on other features, too. So, while the Vibe P1 can last you a full day with its 5000 mAh battery, it's less than half of what the Marathon M5 can do. The Geekbench 3 Battery test yields about 12.5 hours, compared to the 21.5 hours in the Marathon M5. It's still would suit most users.

Perhaps the biggest plus for the Vibe P1 is the fingerprint sensor on the front – making the unlock process and accessing the phone quite snappy. In addition, it runs on the Snapdragon 615 SoC and can perform better than the Marathon M5, but as well as the Lenovo Vibe S1 or OnePlus X.



Price
₹15,999

The camera on the other hand, is quite similar to the Marathon M5. The Vibe P1 can take good shots under well lit conditions, but is weak under low light. The Vibe P1 and Marathon M5 also look identical. The difference is in camera placement and the fact

that the Vibe P1 doesn't have a metallic frame around it. It doesn't take anything away from the looks though, the Vibe P1 looks premium for a sub 20k smartphones.

Overall, the Vibe P1 is a good phone at ₹15,999. If you want the absolute best in terms of battery life at this price bracket, then the Marathon M5 is the phone to go for, but you'll have to pay 2K more for it, which in our mind is a justified markup.

Prasid Banerjee



Design	74
Features	75
Performance.....	67
Value	67

Specifications

Display: 5.5 inch 1080p IPS; **RAM:** 2GB; **Processor:** 1.5 Ghz Snapdragon 615 octa-core; **Storage:** 32GB, expandable to 128GB; **Battery:** 5,000 mAh; **Operating System:** Android 5.1 Lollipop

Contact

Phone: 1800-3000-7678
Email: smartphones@lenovo.com
Website: www.lenovo.com/contact/in/en



Speakers for \$1,990

Apple starts selling the Devialet Phantom speaker exclusively in 14 top stores across the US. The top model costs upto \$2,390 <http://dgit.in/1N05Qdo>



Kanye in Oxford

Kanye West presented a guest lecture where he touched on various topics including the working of his inner mind. <http://dgit.in/KanyeAtOxford>

ZOTAC 240 GB Premium Edition

Quite the first impression

ZOTAC makes a foray into the SSD business with their brand new spanking Premium Edition series. Currently, available in 120, 240 and 480 GB capacities, these SSDs are powered by Phison's latest S10 controller which we've briefly touched upon in our review of the Kingston HyperX Savage SSD. And just like the Kingston HyperX Savage, the ZOTAC 240 GB Premium Edition also uses Toshiba's A19 MLC NAND, except the ZOTAC SSD uses eight NAND chips while the Kingston SSD uses sixteen. And the performance difference between the two is absolutely minimal as well. To put things into perspective, the ZOTAC SSD was ahead of the Kingston SSD by 0.06 points



Price
₹7,590

in our benchmarks – not really a real-world differentiator, for most tasks.

So where does it differ from its twin from another mother? For starters, the Savage is well built with a thick metal chassis while the ZOTAC SSD's body is a little thin but made of aluminium as well. The internal layout is quite similar as well except for the fact that one has twice the number of NAND chips. Both SSDs come with three year warranties but the ZOTAC SSD is a lot cheaper than the Kingston HyperX Savage – a crucial differentiator. For that price, you get just the SSD and a few screws so it's not as if there's more value for money given the fact that the Kingston packaging comes with an external case as well. However, cost/GB is quite less.

Being so close to the stalwart Samsung 850 Pro, you might be hard pressed to pick the Samsung over the ZOTAC. The performance difference is minimal but the cost difference is the clincher in a price conscious market like ours. Definitely worth considering for an SSD at sub-10k.

Mithun Mobandas



Performance.....85
Build70
Value for Money70

Specifications

ZTSSD-A5P-240G-PE; Form factor: 2.5-inch; **Cost/GB:** '32; **Dimensions:** 100 x 69.9 x 7 mm; **Controller:** Phison PS3110-S10; Toshiba A19 MLC Toggle NAND; **Warranty:** 3 years

Contact

Aditya Infotech Ltd.
Phone: +120-4555666
Email: sales@adityagroup.com
Website: www.zotac.com

Gionee Marathon M5

Going the extra mile



The 6020 mAh battery on the Marathon M5 could have ended up as just another number, but the company went the extra mile to ensure it lasts long. It's not that there are no compromises here, but the battery makes up for them. If this phone doesn't last you two days on regular usage, then you're using your smartphone too much. On the Geekbench 3 Battery Test, the phone runs for over 21.5 hours, which is more than any other phone has been able to on our tests.

While the 720p AMOLED display may not sound like much, it is actually really nice. The colours pop and even though the screen is a tad over-saturated, many would like



Price
₹17,999

this display. Combined with really good touch sensitivity and feel. And despite the 5.5 inch size, the pixel density doesn't really get in the way.

The 1.3 GHz MediaTek processor again a conscious choice. Even though it is a lower performing processor than the market average, you won't mind it unless you're a gamer. High-end games do show lags on the device, but on regular usage, it's just about fine. This is another area where the battery life makes up for the phone's shortcomings.

Lastly, the 13MP camera on the back can take good images as long as the lighting is good enough. Low light shots though are less than average. Overall, if battery is your only concern, then the Marathon M5 is the phone to go for.

Prasid Banerjee



Design80
Features78
Performance.....73
Value64

Specifications

Display: 5.5 inch 720p AMOLED; **Processor:** 1.3 GHz MediaTek quad-core; **RAM:** 3GB; **Storage:** 32GB, expandable to 64GB; **Camera:** 13MP rear, 5MP front; **Battery:** 6020 mAh; **Operating System:** Android 5.1 Lollipop

Contact

Phone: 18002081166
Email: <http://gionee.co.in/write-to-us>
Website: www.gionee.co.in



e-stuff causes lung disease

A Harvard study has found that the e-cigarettes can still scar the lungs and cause lung disease.

<http://dgit.in/ecigarettesCancer>



And in the darkness bind them!

The BBC and ITV have been embattled in a sparring match which is pretty hilarious for neutrals like us:

<http://dgit.in/BBCroyalCharter>

Bazaar

Kingston HyperX Savage SSD

Phison's a fighter



Performance.....85

Build75

Value for Money56

Specifications

SHSS3B7A/240G; Form factor: 2.5-inch; Cost/GB: ₹40; Dimensions: 100 x 69.9 x 7 mm; Controller: Phison PS3110-S10; Toshiba A19 MLC Toggle NAND; Warranty: 3 years

Contact

Kingston Technology
Phone: 1860 233 4515,
Email: sales_india@kingston.com,
Website: <http://www.kingston.com/>

Kingston's HyperX Savage SSD had us all skeptical in the beginning. After all, the last time we came across an SSD with a Phison controller, i.e. the Phison PS3109-S9, we were far from impressed. So far, that it was outright painful to continue benchmarking that particular drive. But Kingston's HyperX Savage was a completely different experience and the controller at its heart, the Phison PS3110-S10 surely does deliver top notch performance. Designed to be the jack of all trades, the PS3110-S10 is compatible with asynchronous, synchronous and toggle NAND. In this particular scenario, the new controller has been paired with Toshiba's A19 MLC NAND.

The Kingston HyperX Savage does feel really premium with a hard board package, foam cushion on the inside and accessories for all needs. They



ship a 3.5-inch adapter and an external case if you wish to use the drive as an external. And you don't even need to go hunt for a screwdriver because they've clubbed that as well. It's the lazy nerd's care package. The SSD itself feels quite durable with a thick and heavy metal casing emblazoned with Kingston's branding. On the inside, the PCB has 16 NAND packages all, neatly packed with plenty of spacing between them.

From a performance perspective, the Kingston HyperX Savage was surprisingly good. Sequential read speeds were around 545 MB/s and write speeds were around 526 MB/s. Even 4K read and write speeds were way above average. It does prove to be a formidable opponent to the flagships from other manufacturers like Samsung and SanDisk.

Mithun Mobandas

Kingston Impact SODIMM RAM

A barebones essential

You might be wondering, why on earth did we start reviewing RAM? Well, with the changing tides of the PC market, Mini-PC sales have started increasing and a lot of these Mini-PCs happen to be barebones. So you'll want to know which RAM to get for your next Mini-PC purchase. Look no further, here's a pretty decent candidate.

This particular model is the Kingston HX318LS10IBK2/8 which happens to be rated for 1866 MHz CL10. It also supports two other JEDEC profiles – 1600 MHz CL9 and 1333 MHz CL8. For the uninitiated, it seems that having a greater Front Side Bus (FSB) frequency equals greater performance.

Unfortunately, that isn't the whole story. You need to pay attention to the latency timings as

well, which in this case is indicated by the number next to CL9.

So is it really worth getting more MHz for more money? It's true till you hit the sweet spot, which in the case of DDR3 memory happens to be 1600 MHz, after which you get diminishing returns. However, this is the case for the average user. If your applications are more focussed on memory bandwidth then more MHz is better. When we ran PCMark on the kit at 1600 MHz and 1866 MHz, the scores were only different by 2 points which is within the margin of error.

But when a memory only benchmark like MaxxMem was run on the two kits, we noticed a sizeable jump in scores which amounted to 10.17 per cent. So choose your DIMM wisely.

Mithun Mobandas



Performance.....75

Build70

Value for Money70

Specifications

HX318LS10IBK2/8; Form factor: SODIMM; JEDEC Timings: DDR3-1866 CL10, DDR3-1600 CL9, DDR3-1333 CL8; Voltage: 1.35V; Height: 30mm; Heat spreader: None.

Contact

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Website: <http://www.kingston.com/>

Agent001

Are inexpensive GPUs sold in the market worth your time and money? The Agent speaketh!

Price watch

This month we take a look at phones under 25k and 2-in-1 laptops / convertibles sold in the market

Pick the perfect accessories for your phone!

With so many options in the market, you're spoilt for choice when it comes to accessories for your phone

Abhishek Balaji
readersletters@digit.in

Cases and covers

Almost all phones and tablets need a case or a cover. You wouldn't want that shiny new gadget of yours to get a scratch or a dent would you? There are several options available for cases. You can get one that is purely functional or something that feeds your passion. The market is full of options and you are spoilt for choice.

Rugged cases

Almost all cases which offer durable and heavy duty protection will compromise on the look and feel of the phone. Your phone will stop being that shiny block of metal and will resemble a soapbox, and these cases will add considerable heft to your phone, which will be a deal breaker if you bought a phone which is sleek and beautiful. Some of them might also disregard port openings, adding to your misery.

What you need to look for:

- Proper port openings
- Dust/water protection



Rugged cases are built to last

- Kickstand
- Built-in screenguard

Deal breakers:

- Too much heft/bulk
- Difficult to insert/remove

Thin Cases

If you are looking at just basic protection for your phone's back or glass, you can buy one of the thin cases. These cases will offer minimal protection from scratches and bumps, but may not survive when dropped or dunked in water. These are standard cases and some phones even come bundled with these cases. These cases focus purely on functionality more than anything else. Most of them will retain the original shape and feel of the phone. One important feature to look for is a lip on the front of the phone. This ensures that the screen doesn't get scratched when you place the device face down on a table. For thin cases, with a bit of personality, we recommend the cases available from DailyObjects.

What to look for:

- Lip on the front
- Smudge, fingerprint resistance
- Covered corners
- Proper port/button cut-outs

Deal breakers:

- Wacky prints on the case
- Weak edges
- Cheap plastic
- Sharp Edges

Bumpers

Bumpers are polycarbonate, plastic or metal bands which cover only the frame of your phone. These are the best option if you want the best of both worlds, protection and minimalism. Bumpers provide a small lip on the front of your



Thin cases provide minimum protection, while retaining the form factor of the phone

phone, so, you can place the phone on a table face down, without worrying about the screen getting scratched. They also provide protection to the corners of the device which are the critical areas should you ever drop your phone. RhinoShield has some sweet bumpers to offer, which protect your phone very well. They are worth checking out.

What to look for:

- Rounded corners
- Lip on the front and back
- Scratchless insertion and removal
- Port covers



Bumpers provide protection to your device where it matters, so it'll save the phone from accidental drops and bumps.

Killer rigs

Building a rig? Don't know what components to include? Fret not, we'll sort you out.

Recommended buys

This is Digit pick of the best products to buy across several categories, updated every month.

Phone Model	Life-Proof cases			Slim Cases		
	Brand-Model	Price (₹)	Link	Brand-Model	Price (₹)	Link
iPhone 6/6S Plus	Otterbox Defender	4000	http://dgit.in/OtteroxDef	Spigen Thin Fit Case	1000	http://dgit.in/Spigen6SP
iPhone 6/6S	Otterbox Defender	3070	http://dgit.in/INT0uBY	Spigen Thin Fit Case	1000	http://dgit.in/Spigen6s
Huawei Nexus 6P	Poetic Revolution	1200	http://dgit.in/Poetic6P	Spigen Thin Fit Case	1000	http://dgit.in/Spigen6s
Samsung Galaxy Note 5	Poetic Revolution	1700	http://dgit.in/PoeticN5	Nillkin Super Frosted Shield	320	http://dgit.in/NillkinN5
OnePlus Two	Spigen Ruggedd Armor	800	http://dgit.in/SpigenOPT	Nillkin Super Frosted Shield	340	http://dgit.in/NillkinOPT
Huawei Honor 7	Amzer Pudding Soft Gel TPU Skin	480	http://dgit.in/AmzerH7	Nillkin Super Frosted Shield	400	http://dgit.in/NillkinH7
Moto X Style	Supcase Unicorn Premium Protective Bumper Case	1700	http://dgit.in/SupcaseMX	Nillkin Super Frosted Shield	480	http://dgit.in/NillkinMX

Deal breakers:

- Weak construction
- Smooth finish, weak grip

Phone skins

If you are one who likes to use your phone without any cases, but want minimal protection against scratches, you should definitely try phone skins. Phone skins are basically high quality stickers, which wrap around your phone. You can customize the print or choose one of the various finishes to glorify your phone. The most popular style among the skins seems to be the carbon fibre finish, which also provide some amount of grip when using the phone. There are several companies offering such services and some even provide skins for tablets, laptops, gaming consoles and power banks.

What to look for:

- Residue less removal
- Good grip
- Proper cutouts for sensors and ports

Deal breakers:

- Poor adhesion
- Too thick, which might prevent the usage of cases and bumpers

Brands:

- dbrand, Skinova, Slick-wraps, Skins4Gadgets

Screenguards

Screenguards aren't that important in phones these days as they used to be earlier. With the advent of Gorilla Glass and DragonTail glass, phone screens are becoming more and more resilient to shattering and scratches. Tempered glass has taken the market by storm, but it's more

bark than bite. Owing to their thickness, usually, 0.9mm, they add a significant amount of glare to the screen. Protecting the glass in your screen with glass might not seem like the best idea, but the idea behind tempered glass is that it shatters first on impact while protecting your glass, and these are expensive. Usually 2x-3x times the cost of regular screenguards, so are they worth it? Yes and No. Tempered glass affects visibility under direct sunlight. If your phone has an AMOLED screen or a pressure sensitive screen, the tempered glass will significantly affect how you see the screen. If screen glare bothers you a lot or you aren't very clumsy, you might as well skip the tempered glass.

Matte finish is good when you want protection from smudges and fingerprints on your screen, but sunlight readability is close to null.

Tempered glass

What to look for:

- Anti-glare
- Residue-less removal
- Impact resistance

Deal breakers:

- Thickness
- Phones with curved, AMOLED, pressure sensitive screens

Screenguards

What to look for:

- Clear, Glossy finish
- Wet application for curved screens, dry for regular
- Impact resistance

Dealbreakers:

- Material too thin
- Covers proximity sensor

Portable chargers

Powerbanks are extremely important when you have unreliable battery life and a busy life. They are available in a wide variety of sizes, right from ones that fit in your wallet to those which can charge your phone 10 times over. But, not all portable chargers are created equal. There are several brands which use recycled batteries from phones and tablets in the portable charges and these can not only harm your device, but the charger will also give out after a few uses. Branded portable chargers are never cheap, but they are guaranteed to last longer and will hold power for a lot more charge cycles. Be wary of the numerous non-brand chargers available which sell for cheap.

What to look for:

- High capacity: 10000-21400mAh
- High Amperage. 2.1A/2.4A preferable for faster charging
- Good build
- Multiple output ports
- Power indicator
- Type-C port

Deal breakers:

- Oversized
- Glossy finish, fingerprint/smudge magnets
- Low power output

Interesting Find: Skin4Gadgets customizable power banks

Skin4Gadgets has partnered with Tukzer to offer the option of customizing power banks. You can head over to their website at skin4gadgets.com and choose any custom skin and the capacity of the power bank and



Memes for Dummies

Adobe has released an app on the App Store which lets you make memes.
<http://dgit.in/MemeDummy>



Custom watch faces!

You can now create custom watch faces for Android wear without any code!
<http://dgit.in/1Yq28MR>

Brand	Model	Type	Application	Avg Price (₹)	Link
Evolutive Labs	Rhino Shield	Regular	Dry	\$24.99	http://dgit.in/RhinoShld
GadgetShieldz		Regular	Wet	7999	http://dgit.in/gdtshld
Spigen	GLAS.tR SLIM	Tempered glass	Dry	999	http://dgit.in/SpigenSG
Nillkin	Anti Explosion 9H	Tempered glass	Dry	400	http://dgit.in/NillkinSG
Spigen	Crystal Clear	Regular	Dry	700	http://dgit.in/tekkitake

Skin4Gadgets will ship you a 10000 mAh or a 15000 mAh depending on your choice. Priced at 2499 and 2999 respectively, these aren't the most VFM in the market right now, but if you want a power bank that shows off your style, these two are a good option for you.

Charging cables

We all need a spare charging cable, whether it is at your office or your car or just to keep one in every room in your house. Although the OEM cables are the best for your phone, 3rd party cable manufacturers are quickly catching up. There are several cables in the market; while not all of them will damage your phone, a few of them will charge your phone the fastest. Standard cables charge at 0.5A or 1A, but some support upto 2.4A. This is useful for phone supporting faster charging standards. If you however, carry an iOS and a device which uses MicroUSB/USB-C, you can get a dual cable, which has both the connectors.

What to look for:

- Braided cables-Kevlar/Nylon
- Length of the cable
- Durability of the cable ends
- Thickness of the cable
- Amperage support

Deal breakers:

- Thin, flimsy construction
- Incorrect endings

- No MFI certification for Apple device cables
 - No 56K Ohm resistor for USB-C cables
- Recommended Brands:**
- Anker, Aukey, AmazonBasics, BoAt

Interesting Find: Flippy claims to be the world's first reversible micro USB cable and it is quite late to its claim,. Taking design cues from the USB-C connectors, these cables can be inserted into the ports in either direction, which saves a few precious seconds every time you insert the cable ends into a port. The cable works with all the standard micro USB devices and wall adapters, so there is no need to for any modification to use this cable. Flippy also features a tangle free flat design and supports a charging current of upto 2.1A. It costs ₹299 and comes in Snow White, Tangy Orange, Aqua Blue and Midnight Black.

Link: <http://dgit.in/DottFlippy>

Camera accessories

Premium smartphones are increasingly becoming well equipped with capable cameras, which are edging out the point and shoot market. So, why not add a few lenses to make your phone shoot photos and videos like a DSLR-wannabe. You can take your pick from telephoto, macro, wide, fisheye and even lenses which make it look like a kaleidoscope. There are several branded options available, which

provide the optimal performance, while increasing the functionality manifold. Heck, you can even get an add-on, which will provide you front flash for selfies!

What to look for:

- Compatibility with existing cases and covers
- Compatibility with multiple devices
- Image quality
- Clipping mechanism

Deal breakers:

- Chromatic and Spherical aberration
- High price
- Only-iPhone compatibility

Recommended Brands:

- Photojojo, Olloclip, Momentlens

Wall chargers

With almost all devices adopting a standard charging mechanism, it is easy to buy a few wall chargers which can be used with multiple devices. The best deal would be to invest in one with multiple charging points so that you can plug in all your devices at the same time!

What to look for:

- Multiple output ports
- Higher Amperage
- Charging indicator
- Desktop design
- Compatibility with Qualcomm Quickcharge mechanisms
- Intelligent power switching

Deal breakers:

- Low output amperage
- Regional power plug
- Improper output voltage

Recommended brands:

- Anker, Aukey, Belkin

OTG Flash Drives

USB OTG (On The Go) is found on nearly every smartphone in the market today, and is useful for those who have limited built-in storage on their phones. OTG flash



OTG drives come with dual connectors

Brand	Model	Capacity	No. of Output ports	Price (₹)	Link
Anker	Powercore 20100	20100 mAh	2	5299	http://dgit.in/Anker20k
Huawei Honor	AP007	13000 mAh	2	1399	http://dgit.in/Honor13k
Xiaomi	Mi pb16000	16000 mAh	2	1399	http://dgit.in/XiaMi16k
Xiaomi	Mi pb10400	10400 mAh	2	999	http://dgit.in/XiaMi10k
Hako	pb200	20000 mAh	3	1599	http://dgit.in/Hako20k
Lenovo	PA10400	10400 mAh	2	1199	http://dgit.in/Lenovo10k



New iOS beta out!

Apple released the iOS 9.2.1 Beta for Public Beta testers just after the developers' beta version released <http://dgit.in/iOS921>



Floating ornaments

Dyson engineers have managed to design a Christmas tree with floating ornaments <http://dgit.in/1IdcFZO>

Feature

Brand	Model	Wired/ Wireless	Category	Price (₹)	Link
Cowon	EM1	Wired	Budget	699	http://dgit.in/CowonEM1
Cowon	EK2	Wired	Budget	1125	http://dgit.in/CowonEK2
Creative	EP-630	Wired	Budget	999	http://dgit.in/CreaEP630
Sennheiser	CX-180 Street II	Wired	Budget	990	http://dgit.in/SennCX180
Brainwavz	Delta	Wired	Budget	999	http://dgit.in/BrainDelta
JBL	Synchros E10	Wired	Mid-Range	2450	http://dgit.in/JBLSE10
SoundMAGIC	E10S/E10M	Wired	Mid-Range	2300	http://dgit.in/SME10S
Yurbuds	Venture Talk	Wired	Sports	2999	http://dgit.in/YBVenture
Brainwavz	BLU-100	Wireless	Sports	3399	http://dgit.in/1I8LxeK
Jaybird	X2	Wireless	Sports	15999	http://dgit.in/BwBLU100
Bose	QuietComfort 20i	Wired	Commute	25200	http://dgit.in/1QpY6F9
Audio Technica	ATH-SJ33	Wired	Over the Ear	2299	http://dgit.in/1IPvU1F
JBL	Tempo J03B	Wired	Over the Ear	2490	http://dgit.in/JbLTempo
Koss	PortaPro	Wired	Over the Ear	5882	http://dgit.in/kossPortapro
Harman Kardon	CL	Wired	Over the Ear	8350	http://dgit.in/1TPOpNS
B&W	P3	Wired	Over the Ear	9499	http://dgit.in/1Uza0va
B&O	BeoPlay H2	Wired	Over the Ear	14999	http://dgit.in/227aMog

drives have been in the market for quite some time and there are several functional differences between the models available. You can get one which has a regular USB port built in, which makes the OTG flash drive useful as a regular pen drive as well. One of the other options include a OTG Micro SD card reader, which gives you the option of expanding the storage.

What to look for:

- High capacity
- Micro SD card slot
- High transfer speed
- High read/write cycles

Deal breakers:

- Large size: Will not fit phones with cases
 - Poor read/write speeds
 - Cheap plastic builds
- Recommended brands:
- SanDisk, Strontium, Transcend, Kingston

Headphones

When buying headphones, you're spoilt for choice with the several hundred options for different types of budgets. You can buy wired ones or bluetooth headphones. The choices change depending on where you plan to use them, in your home, while on a run, while commuting or in a work environment. It also varies based on the type of phone you have. Headphones are very task specific and what attribute gets more importance depends totally on each use case. For example, if you are using headphones for your commute, isolation or active noise cancelling becomes important. If you need them to pump out motivating beats for your workout or morning run, secure fit and wireless options make more sense. At the broadest level you have over the ear headphones and those that you insert in your ear canal – commonly known as In

Ear Monitors (IEMs). The more popular category is in-ears.

What to look for:

- Great sound quality
- Good quality wires
- Long battery
- In-line remote controls, microphone

Dealbreakers:

- Single button remote
- Weak cable endings

Recommended brands:

- For budget segments: Cowon, Creative, SoundMagic, Brainwavz, JBL
- For mid range: AudioTechnica, KOSS, Sennheiser, Klipsch
- High end: Sure, Bose

Bluetooth speakers

Speakers are becoming multi-function swiss army knives, and can serve many additional uses. Often, speakers can be used as a portable charger, FM radio, MP3 player and even a cooler [<http://dgit.in/C00lest>]. If your phone has weak speakers, you should invest in a good portable bluetooth speaker.

What to look for:

- Small size, portability
- Dust/Water resistance
- Long battery life
- Loudness
- Daisy chaining

Deal breakers:

- Noise at high volume levels
- Bad build quality

Bluetooth keyboards

If you aren't satisfied with the on-screen keyboard, and use your smartphones to write longform text or huge emails, you should consider getting a bluetooth keyboard.

What to look for:

- Portability
- Optimal key travel
- Battery life
- Compatibility with platforms

Dealbreakers:

- Recessed keys
- Small key size

Recommended products:

- Logitech K380, K480, Zagg Pocket Keyboard 

Brand	Model	Price (₹)	Link	What we like:
B&O	Beolit 15	35000	http://dgit.in/BOBeolit15	Best bluetooth speaker in the market
Creative	Sound Blaster Roar	15792	http://dgit.in/CreaRoar	Full feature set
Ultimate Ears	Boom	14895	http://dgit.in/ueBoom	Splash Proof, 360 degree sound
Logitech	X100	1700	http://dgit.in/1UA7q86	Portable, VFM
JBL	Micro/Clip	2490	http://dgit.in/1IQ9P31	Portable, VFM
BoAt	Rugged	1909	http://dgit.in/1UA8bOH	Has a battery pack
Zagg	iFrogz Tadpole	1760	http://dgit.in/1UA8A3F	Keychain sized



Odd and even traffic

Delhi introduced regulation that would allow vehicles to ply on alternate days only based on their number plate <http://dgit.in/DelhiOddEven>



Go to Machu Picchu!

Google Street view added Machu Picchu to the places available <http://dgit.in/MachuPicchuGSV>

Cheap Graphics Cards

Agent001 wonders about the economy market

Agent 001


agent001@digit.in

Every now and then, we get a query about which graphics card is the best to get for about ₹5,000. Very few things make me cringe more than such a query and I'd like to explain why. Graphics cards are like every other hardware segment out there. They can be broadly classified into three different price categories – Entry, Mid-range and Enthusiast. And like everything under the sun, the mid-range segment sees the most sales, unless, you happen to be in a price conscious market like India. Here, it's the cheapest cards that sell the most. The case is such that graphics manufacturers expend quite a lot of resources for R&D with countries like India in mind. While graphics cards are like most hardware categories, there's

card if it is a luxury?

Let's take a look at the recently announced NVIDIA GeForce GT 930, the latest in the 900-series aimed at this very low-cost market. There are three variants of the card, each based off three different architectures – Maxwell, Kepler and Fermi. Yes, Fermi. The five-year old GPU architecture. Needless to say, the Maxwell variant is slightly pricey coming in at \$90(₹5,966) and the other two are likely to be priced at \$80(₹5,303) and \$60(₹3,977). The Maxwell GT 930 will have 384 CUDA cores and pack 4 GB of frame buffer capacity at a TDP of just 15W. These cards aren't meant for gaming, or else they'd have carried the GTX moniker and not the GT. They'll run HD movies easily and likely support multiple displays since they do have

it or not, is a little over two years old. So you can forget about current AAA titles altogether. Heck, if the reason you're getting a graphics card is to play Full HD movies on your TV, a credit card sized computer like the Raspberry Pi will do a much better job and give you a more wholesome movie watching experience as well. And if you're willing to wait till February then you could also get the Pine A64+ which does everything that the Raspberry Pi does and more – it easily plays 4K video.

If you were to build an affordable gaming machine with an AMD APU, say an A10-7870K(₹11,960), then your machine will be able crunch out the same performance using just the IGP which is a Radeon R7 having 512 stream processors. So basically, you're getting nothing in return for spending ₹5,966 on a new budget graphics card having the latest Maxwell architecture. This is why we often advise our readers to wait for a while and double up their budget to get something better like the R7 370(₹14,090) or the GTX 950(₹13,400). These cards are way better of an investment and will allow you to play current gen titles running at FullHD with most of the eye candy cranked all the way up. And with each generation of CPUs improving their graphics capabilities, the practice of buying really cheap graphics cards seems even more ridiculous by the day. APAC accounts for the most sales when it comes to the GT series and in a few years, this little market is going to dry up and get cannibalised by the GTX series. 



Get an RPi or a Pine A64+ for HTPCs

one thing that sets them apart from the get go. Having one is most oft a luxury and isn't necessary to play games. There exist processor and motherboard combinations which can't drive a display on their own, but this happens to be with the enthusiast or the enterprise segment which is small compared to the rest. So is it really worth buying a ridiculously cheap graphics

the 4 GB VRAM. But when it comes to gaming, they aren't great. If you were to play Battlefield 4 with a GTX 750 which costs just a fraction more, then you'll manage 32-35 FPS on Ultra settings at Full HD. The GT 930 will probably push 22-24 FPS and you might have to crank the settings down a little to get an even 30 FPS throughout. And Battlefield 4, believe



Unsafe hoverboards?

Are hoverboards really unsafe? Apparently, Britain thinks so, read on to find out more: <http://dgit.in/hvrbrdSeize>



Shower under giant dispensers

A new installation by Sprite in a Sydney beach, allows swimmers to shower under giant soda dispensers. <http://dgit.in/SpriteShower>

Agent 001

Doubting the iPhone

I was thinking about buying an iPhone 5s. But I'm now confused. You talked about getting OnePlus Two in place of iPhone 5s. There are some points I wanted you to clarify:

1. The Camera comparison between the two.
2. I have used android phones for a long time like LG G3 having 3 GB RAM, But all android Phones have been blacked out on me. And in comparison to that I think that iPhone is a good deal.
3. I recently lost my LG G3. So in view to that, could you tell me whether iPhones are difficult to trace.
4. I do not mind the screen size, because I prioritise quality. So could you tell the difference between two.
5. iPhone accessories for iPhones are much more than Android devices.
6. The apps available for iPhones are much more compelling than Android.
7. Lastly, The software updates are available at the time of launch in iOS as compared to Android, where only flagships get the latest release.

At last, please give your verdict about which one to buy at this time, considering the prices of the two.

– Avneet Kumar

A To begin with, the OnePlus 2 camera is definitely better than the iPhone 5s: faster, richer colours – simply put, more details and clarity. OnePlus 2 uses a newer OmniVision sensor, and that definitely gives you better camera quality. The iPhone 5s still has a very good camera, but it is not the best any longer.

Second, iPhones have always been a good deal simply out of its longevity, as against many Android devices. If you are okay with sticking to an older generation operating system, the iPhone 5s is a strong contender, but why buy a device to stay outdated?

iPhones, with the new 'Find My iPhone' feature, have better tracking systems, and you will have a better chance of tracing the thief back.

Now, the screen: the Retina display on the iPhone 5s is as good as it always was, and you will not regret it. In comparison, while the OnePlus 2 has a sharp enough

display, it is not as vibrant as the iPhone. However, unless you are highly critical about very minute details, the OnePlus 2 will be a better bet. 4-inch displays are a little hard to work on, at times.

iPhones do tend to have better accessories than Android devices.

Yes, iOS is definitely the best in terms of the app experience. However, Android and iOS share almost every app out there.

Update cycle: The OnePlus 2, we are hoping, is almost certain to receive the latest upgrades in the near future, albeit with a delay of a few months. While the iPhone 5s will possibly get the iOS 10 upgrade, the paltry amount of RAM will probably hinder it way too much. Rather go for the OnePlus 2, than a short-term investment on the iPhone 5s.

To sum up, go for the OnePlus 2, simply because it makes more sense in the long run, is better at multitasking, and has better battery life.

Laptop under ₹25K

Please help me. My use will be quite basic like: movies, songs, connecting to TV via HDMI, internet and also storage. OS doesn't matter, I'll install pirated but if there will be any it is fine. My use can be very aggressive so I don't want my laptop to heat up in few hours. The laptop should not be very heavy and there should be large screen.

– Prince Tomar

A Prince, if you're willing to be more accommodating with your demands or increase your budget to ₹30,000 then you can get something that can easily do all the tasks that you've mentioned. Check out the Lenovo G50-70 (59-422418) which comes with discrete graphics or if you'd prefer to stick to your budget of ₹25,000, then the ASUS A555LA XX1755D is a good option. Both laptops are powered by Core i3 processors and have a 15.6-inch display running at 1366 x 768 resolution. And as a plus point, they're both quite light but not ultralight.

AAA gaming machine

Dear Team Digit, I was hoping you would help me out with my PC. I want to upgrade it into a gaming PC. So that at least I can



Lenovo G50-70

play AAA game such as COD Black Ops III, Witcher 3, FarCry 4, Just Cause 3, Fallout 4, etc., normally without any slow motion and pausing.

My System's Configuration is:

- Motherboard - ASRock H81M-WW
- HDD - 1 TB
- RAM - 8.00 GB (4GB x 2 stick)
- Processor - Intel Core i5-4440 CPU @ 3.10 GHz
- Graphic Card - NVIDIA GeForce GT 610
- PSU - Frontech JIL-2414i

I really want to Play these Games. So I don't care about budget but please make it as LOW as possible. Thanks in advance.

– Yogesh Thakur

A Hey Yogesh,

You seem to have a pretty decent computer already. All you now need is a good graphics card and a power supply to run it. The ASRock H81M-WW already has a PCIe x16 slot, so you can let that be and 8 GB of RAM is sufficient for now though



NVIDIA GTX 960

that could be your next upgrade. If we are to limit your budget to ₹20,000 then get a Corsair VS550 SMPS and the cheapest GTX 960 that you can get your hands on. We found an ASUS STRIX GTX 960 selling for ₹17,200 so you might be able to get that for a little less on the street. Have fun gaming. **D**



Car calls the cops!

A woman in Florida was jailed after her car was prompted to call the police due to the built in safety features. <http://dgit.in/CarcallsCops>



Flaming hoverboards!

A string of cases were reported in the US of Hoverboards catching fire! <http://dgit.in/HoverboardFire>

SPEND SMART

This month we have focused on categories that a lot of you have asked for in the past month – mobile phones under ₹25,000 and 2 in 1 laptop convertibles



MOBILE PHONES UNDER ₹25,000

Brand	Model	Processor Clock Speed	RAM	Screen size	OS	Primary Camera	Battery Rating	Price (in ₹)
OnePlus	X	2.3GHz	3GB	5.5 inch	Android 5.1	13MP	2525mAh	16,999
Gionee	Marathon M5	1.5GHz	3GB	5.5 inch	Android 5.1	13MP	6020mAh	17,999
Meizu	MX5	2.2GHz	3GB	5.5 inch	Android 5.0.1	20.7MP	3150mAh	17,999
HTC	Desire 826	1.7GHz	2GB	5.5 inch	Android 5.0.1	13MP	2600mAh	19,799
HTC	Desire 828	1.5GHz	2GB	5.5 inch	Android 5.1	13MP	2800mAh	19,990
Motorola	Moto X Play	1.7GHz	2GB	5.5 inch	Android 5.1.1	21MP	3630mAh	19,999
Infocus	M812	2.5GHz	3GB	5.5 inch	Android 5.0.2	13MP	2900mAh	19,999
HTC	One E9s	1.5GHz	2GB	5.5 inch	Android 5.0	13MP	2600mAh	20,899
Vivo	X5 Pro	1.2GHz	2GB	5.0 inch	Android 5.0	13MP	2450mAh	22,084
Asus	Zenfone 2	2.3GHz	4GB	5.5 inch	Android 4.4.2	13MP	3000mAh	22,999
Huawei	Honor 7	2.2GHz	3GB	5.2 inch	Android 5.0	20MP	3100mAh	22,999
Nokia	Lumia 830	1.2GHz	1GB	5.0 inch	Windows 8.1	10MP	2200mAh	23,990
LG	Nexus 5X	1.4GHz	2GB	5.2 inch	Android 6.0.1	12MP	2700mAh	23,999
Lenovo	Vibe Shot	1.7GHz	3GB	5.0 inch	Android 5.0.2	16MP	3000mAh	23,999
HTC	M8 Eye	2.3GHz	2GB	5.0 inch	Android 5.0	13MP	2600mAh	24,990
Motorola	Nexus 6	2.7GHz	3GB	6.0 inch	Android 6.0.1	13MP	3220mAh	24,990
Yu	Yutopia	2.0GHz	4GB	5.2 inch	Cyanogen 12.1	21MP	3000mAh	24,999
OnePlus	2	1.8GHz	4GB	5.5 inch	Android 5.1	13MP	3300mAh	24,999



2 IN 1 LAPTOPS AND CONVERTIBLES

Brand	Series	Operating System	Processor	RAM	Display Size (inches)	Graphics	Storage	Price (in ₹)
Acer	One 10	Windows 10	Intel Atom	2GB	10	Intel HD	32GB	15,990
Asus	Transformer Book	Windows 8	Atom Z3740	2GB	10.1	Intel HD	32GB + 500GB	27,999
Lenovo	Yoga 300	Windows 10	Pentium N3540	4GB	11.6	Intel HD	500GB	32,500
Lenovo	Yoga Tablet 2	Windows 8.1	Atom Z3745	2GB	10.1	Intel HD	32GB	34,499
HP	Pavilion X2 10-n028TU	Windows 8.1	Atom Z3736F	2GB	10.1	Intel HD	64GB	34,880
Lenovo	Ideapad Flex 2	Windows 8.1	Core i3-4030U	4GB	14	Intel HD	500GB+8GB SSD	38,500
HP	Pavilion 11-k106TU	Windows 10	Core M3 6Y30	4GB	11.6	Intel HD 515	1TB	39,990
HP	Pavilion X360 11-n109TU	Windows 10	Core M-5Y10C	4GB	11.6	Intel HD	500GB	41,808
Dell	Inspiron 3148	Windows 8.1	Core i3	4GB	11.6	Intel HD	500GB	41,880
HP	Pavilion 13-S102TU	Windows 10	Core i3	4GB	13.3	Intel HD	1TB	47,500
Lenovo	Yoga 500	Windows 8.1	Core i5	4GB	14	2GB NVIDIA	500GB+8GB SSD	57,999
Lenovo	Yoga 3 14	Windows 8.1	Core i7 5500U	8GB	14	2GB NVIDIA 940M	256GB SSD	86,990
Apple	iPad Pro	iOS 9.1	A9X	4GB	12.9	-	128GB	91,900
HP	Spectre X360	Windows 8.1	Core i7 5500U	8GB	13	Intel HD 5500	256GB SSD	1,30,990

Basic rig = ₹21,375 ■ HTPC = ₹31,670 ■ Entry-level gaming = ₹52,420 ■ Mid-range gaming = ₹79,293 ■ Ultra high-end = ₹2,86,963 ■ Digit Test Rig = ₹5,11,382

BASIC RIG

Mini-PC	ASRock Beebox N3000-NUC Barebone	9,649
SoC	Intel N3000	0
Connectivity	802.11ac + Gigabit Ethernet + Bluetooth 4.0	0
Audio	ALC283	0
USB	1x USB 3.0 + 1x USB 3.0 Type-C	0
OS	Windows 10	0
Power Supply	Adapter included	0
Mouse	Logitech MK220 Wireless Combo	1089
Keyboard	Bundled	0
RAM	Gskill F3-1600C11S-4GSL	1,639
HDD	SanDisk SSD PLUS 120 GB	3,299
Sub-total	(Excluding Monitor)	15,676
Monitor	Dell E1916hv 18.5 inch LED	5,699
Total		₹21,375

HTPC

Processor	AMD A10-7700K	10,000
Motherboard	ASUS A88XM-A	6,399
RAM	G.Skill RipjawsX DDR3 4 GB (2 x 2 GB) PC RAM (F3-12800CL9D-4GBXL)	2,137
HDD	Western Digital WD30EZRX 3TB	8,715
Graphics Card	AMD R7 (384 Cores)	0
PSU	Corsair VS450	2,340
Speakers	None	0
Optical Drive	ASUS DRW-24D3ST	990
Mouse	Logitech MK220 Wireless Combo	1,089
Keyboard	Bundled	0
Sound Card	None	0
Monitor	None (your TV)	0
Cabinet	Cooler Master N200	3,550
Total		₹31,670

ENTRY-LEVEL GAMING

Processor	AMD FX8320	11,336
Motherboard	Gigabyte GA-970A-DS3P	7,300
RAM	ADATA Premier DDR3 4 GB (2x 2 GB) 1600 MHz RAM	1,850
HDD	Seagate Barracuda ST1000DM003 1TB	3,591
Graphics Card	ASUS R7 360 2GB	10,415
PSU	Corsair VS450	2,340
Speakers	Philips MMS4040F - 2.1 Channel	2,899
Optical Drive	ASUS DRW-24D3ST	990
Mouse	Logitech MK200 (Bundle)	771
Keyboard	Logitech MK200 (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	41,492
Monitor	ASUS VS228HR	8,178
Cabinet	Antec X1-T Gaming	2,750
Total		₹52,420

MID-RANGE GAMING

Processor	Intel Core i5-4460	13,985
Motherboard	ASUS B85M-GAMER	6,284
RAM	Kingston (2x 8 GB) HX318C10F/8	5,900
HDD	Toshiba 1TB DT01ACA100	3,489
Graphics Card	MSI GTX 960 Gaming 4G	19,250
PSU	Corsair VS650 650W	4,108
Speakers	Harman Kardon Soundsticks III	8,999
Optical Drive	ASUS DRW-24D3ST	990
Mouse	CM Storm Devastator (Bundle)	3,299
Keyboard	CM Storm Devastator (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	66,304
Monitor	BenQ GL2460HM	10,239
Cabinet	Antec X1-T Gaming	2,750
Total		₹79,293

ULTRA HIGH-END GAMING

CPU + Cooler	Intel Core i7-6700K + Antec Kuhler H2O 650	33,487
Motherboard	ASUS Z170-DELUXE	26,399
RAM	Corsair Vengeance (2x 8 GB) CMK8GX4M1A2400C14R	9,810
HDD	WD WD30EZRX 3TB + Samsung 850 Pro 256GB SSD	19,364
Monitor	ASUS PB279Q 4K UHD	62,500
Graphics Card	ZOTAC GTX 980 Ti AMP! Extreme	55,045
Cabinet	Corsair Obsidian Series 750D	11,199
PSU	Antec HCP-1000 Platinum 1000W	16,750
Speakers	Logitech Z906 5.1	17,695
Optical Drive	LG Blu-ray WH14NS40 RW	5,999
Mouse	Logitech G502 Proteus Core	4,550
Keyboard	Corsair Vengeance K70 RGB	15,015
Sound Card	ASUS Xonar D2X 7.1	9,150
Total		₹2,86,963

PRIMARY DIGIT TEST RIG

Processor	Intel Core i7 - 4960X (Extreme Edition)	71,950
Motherboard	ASRock X79 Extreme 9	27,846
RAM	Corsair Dominator 2133MHz (8GB x 4) (CMD32GX3M4A2133C9)	27,710
HDD	Toshiba DT01ABA100V	3,830
SSD	SanDisk Extreme II 240GB (x2 for HDD testing)	34,000
PCIe SSD	Intel 750 NVMe + Kingston HyperX Predator 480 GB	126,999
Graphics Card	Zotac GeForce GTX TITAN X	86,990
Cabinet+ Cooler	Cabinet (NA) + Intel RTS2011LC - Stock AIO	NA
PSU	Corsair HX1050	16,059
Monitor	BenQ BL3201PT 32-inch	94,599
Optical Drive	NA	NA
Mouse	Razer Ouroboros Elite	9,899
Keyboard	Tt eSPORTS Meka G1	11,500
Total		₹5,11,382

digit RECOMMENDED BUYS

From smartphones to graphics cards, here's what we recommend for your next purchase!



TOP 3 GAMING LAPTOPS

Brand	Model	Price (in ₹)
MSI	GT72 6QD	1,85,000
HP	Omen 15-5116tx	1,59,990
Acer	Aspire V15 Nitro	1,10,000



TOP 3 ULTRABOOKS

Brand	Model	Price (in ₹)
ASUS	Zenbook UX305LA	97,990
Dell	XPS 13	69,390
HP	Elitebook Folio 1020 G1	1,25,580



TOP 3 MID-RANGE SMARTPHONES

Brand	Model	Price (in ₹)
ASUS	Zenfone 2	19,999
Meizu	MX5	19,999
Motorola	Moto X Play	18,499



TOP 3 PREMIUM SMARTPHONES

Brand	Model	Price (in ₹)
Apple	iPhone 6s Plus (16 GB)	72,000
Samsung	Galaxy Note 5 (64 GB)	53,900
Huawei	Nexus 6P (64 GB)	42,999



TOP 3 PROCESSORS

Brand	Model	Price (in ₹)
Intel	Core i7-5960X	88,490
Intel	Core i7-5930K	49,250
Intel	Core i7-6700K	33,990



TOP 3 BLUETOOTH SPEAKERS

Brand	Model	Price (in ₹)
B&O	Beolit 15	35,000
Creative	Sound Blaster Roar	14,000
Ultimate Ears	Boom	14,000



TOP 3 GRAPHICS CARDS

Brand	Model	Price (in ₹)
NVIDIA	GeForce GTX TITAN X	86,990
ZOTAC	GeForce GTX 980 Ti AMP! Extreme	59,338
ASUS	STRIX GeForce GTX 980 Ti	65,338



TOP 3 WIDESCREEN DISPLAYS

Brand	Model	Price (in ₹)
LG	34UC97C (34-inch)	88,000
BenQ	BL3201PT (32-inch)	1,15,000
ASUS	PB287Q (28-inch)	51,000



TOP 3 FITNESS TRACKERS

Brand	Model	Price (in ₹)
Jawbone	UP2	9,999
Fitbit	Charge HR	12,990
Xiaomi	Mi Band	999



TOP 3 WIRELESS ROUTERS

Brand	Model	Price (in ₹)
D-Link	DIR-890L	17,875
NETGEAR	R8000	14,990
ASUS	RT-AC3200	24,750



Loneliest kid in UK

This kid has moved reddit so much, hundreds of Christmas cards are coming his way. Oh internet! <http://dgit.in/SchoolBoyChristmasCards>



Fridge boats!

Rescuers in UK are using fridges to get people out of their small homes <http://dgit.in/FridgeAsLifeboat>

It's time for TED!

On the sidelines of the sixth successful edition of TEDxGateway, arguably India's largest, most high-profile independently organized TED event, we caught up with Jay Herratti, Executive Director, TEDx, to understand the platform's mission and reception in India, among other things. Excerpts:



Jay Herratti ▶
Executive Director, TEDx

Jayesh Shinde
jayesh.shinde@digit.in

d How does TEDx identify an idea that's worthy of spreading through the platform? Is there a mechanism in place to predict the impact an idea would have in general?

Herratti: We do that several ways, including posting some of the most compelling TEDx talks directly on <http://ted.com> or featuring them in playlists on the TEDx YouTube Channel. We also share daily stories on the TEDx Innovations blog. This gives us an opportunity to showcase the creative ways organizers around the world are hosting TEDx events in their local communities and spotlight some of our favourite talks.

d At TEDx, you are used to seeing a LOT of innovative ideas come your way. What fuels innovation? Necessity or curiosity?

Herratti: Necessity and curiosity are just two catalysts for innovation. By inviting speakers to focus on a single new idea in each talk, we are often more clearly able to see the essence of their innovation. I like to think that TEDx events celebrate human potential, and the ability to innovate is one of the things that makes us unique as humans.

d On TEDxWomen, what was the thought behind creating a forum exclusively for

women and how has the response been so far to this brand new format?

Herratti: TEDxWomen was imagined as a way to celebrate the women and girls shaping our future. We created a free TEDxWomen license so TEDx organizers can simultaneously host their own local events and tune into sessions from the main stage via livestream. In 2015, we had 238 TEDxWomen events take place across the globe in 68 countries.

d Can you share some insights into how India has responded to and consumed TEDx content?

Herratti: India is – and has always been – an important country for TEDx. There have been 563 TEDx events in India since 2009, with dozens more scheduled to take place in the first half of 2016 alone. We know from local TEDx organizers that their communities are hungry for great ideas. There's an entrepreneurial spirit in India that's fuelling this thirst for rapid innovation.

d From a layman's perspective, what are some of the biggest misconceptions about the TEDx platform?

Herratti: Many people think TEDx is just about the talks. And while the talks are a big part of spreading ideas – across borders, oceans and around the world – the real magic happens in the room at TEDx

events. It's about the serendipity of interaction that happens when people gather in one room and engage with each other. That's where visions are aligned and new ideas are born.

d What are some of the lesser-known facts about TEDx? Something that you can't find online?

Herratti: TEDx organizers around the world are themselves members of a global community of thousands. A big part of their experience is the bond they build with fellow organizers from other countries.

d Which talks are your all-time favorites?

Herratti: I can never answer this question. I have too many favourites. But two come to mind immediately: TED Prize winner Sugata Mitra's TED 2013 talk about building a school in the cloud and Dilip Ratha's TEDGlobal 2014 talk about international remittances – both are by speakers from India and both of these ideas impacted countless people's everyday lives. I also recently watched a TEDxGatewayWomen talk by Justice Leila Seth and was moved by her life story and insights.

To read the entire interview head over to : <http://dgit.in/Nv15bx> **d**



Offline navigation for iOS!

Google Maps finally adds offline navigation capabilities to its iOS app
<http://dgit.in/GogIOffline>



Do Not Distrub

Slack adds DND mode to help overwhelmed team members.
<http://dgit.in/SlackDND>



Security in the world of IoT

We spoke to Santosh Pillai, an industry veteran with decades of experience in digital technology security vertical. He shares key insights about security and IoT, giving us plenty of food for thought. Excerpts from our interview follow:



◀ Santosh Pillai,
Director & CTO, 2020 Imaging

Mithun Mohandas
mitbun.mobandas@digit.in

1 Looking at the IoT landscape in its current form, it is quite evident that there is a lack of standardization in terms of security protocols. Every device manufacturer is coming up with own implementation. To offset costs, compromising on security seems to be an avenue since there is nobody to keep an eye out. Even the FCC only recently overhauled RF rules (<http://dgit.in/fccrf>) after 17 years. How long do you think it will be before a universal framework is established for all manufacturers?

Santosh: IT networks have been evolving over the last three decades and IoT networks will also go through an evolution cycle. The transition of IoT networks from closed network to enterprise network to public network has already started. However, the traditional networking standards will need to be adapted to the IoT requirements, especially when it comes to security. For example, device-based digital certifications from boot-up to handshakes to operations will greatly reduce the security threat in IoT networks. A seamless interface with enterprise firewall applications, for instance, will be a near-term essential. I think it will take another three to five years to setup IoT frameworks and security will be a major part in that.

2 Will the IoT bubble burst? If so when? The reason behind this question comes from a recent survey ([link](#)) which indicates that 50 per cent of the customers surveyed were skeptical about IoT devices due to security concerns and about 90 per cent of developers had similar concerns as well. If the customer pool seems undecided over a technology, why would developers focus their energy towards the same?

Santosh: The IoT bubble may burst in its current format, only to evolve into a more business centric framework. The IT revolution has successfully converted data into intelligence, now the IoT revolution is converting intelligence into actionable intelligence. Many customers that we are talking to, especially in the manufacturing sector have already started to execute IoT projects. Security concerns may continue to remain for a longer time than concerns on business use cases. However, it is only a matter of time before these concerns are trashed out, at least to get the ball rolling. The fact that Gartner continues to have IoT as a top technology trend, the fact that IT giants like Cisco continue to have IoT as a business focus, the fact that device leaders like Schneider Electric have IoT in the heart of their ecosystem, and the fact that IoT continues to reign a major proportion of technology start-ups across the world means the Internet of Things as a concept is here to stay.

3 How will Li-Fi impact the nascent IoT landscape?

Santosh: Wi-Fi does present a limitation in terms of number of devices and systems at the aggregation level, hence a faster Wi-Fi on a different technology as that of Li-Fi will positively impact the number of aggregation devices. However, the business use cases are more important right now for IoT's growth story, than the bandwidth limitations. Li-Fi will be needed when IoT transforms itself into IoE (Internet of Everything).

4 Other than the glaring security issues, what is the biggest obstacle along the road for IoTs?

Santosh: Creation of definitive use-cases that create business impact is the biggest obstacle right now for IoT. Once that happens, the other challenges like adoption and standardization will take care of themselves. But one suggestion that we have for IT leaders adopting IoT solutions for their enterprises is to follow a bi-modal approach where they continue to run their existing business on their current systems and switch over to an IoT framework for new business requirements. This way, they not only mitigate the risks of new technology but can also create validations for business leaders to sponsor more such initiatives in the future. **1**



See through a Dolphin's eyes

Researchers have managed to generate a highly enhanced image of what a dolphin could be seeing through their eyes <http://dgit.in/HowDolphinsSee>

Virtual trial room

You can now use your Xbox One and a Kinect to try on clothes virtually, promises The Mall, a new shopping app <http://dgit.in/VirtualFitting>

Industry Connect

You could become the next self published literary sensation

We speak to Neal Thompson, Director of Author and Publishing Relations at Amazon, on the ways in which budding writers can use Kindle's Direct Publishing (KDP) platform to quickly push their books to market



Neal Thompson, Director of Author and Publishing Relations at Amazon

Siddharth Parwatay
siddharth.parwatay@digit.in

d How does one start with KDP?

Neil: So kindledirectpublishing.com is where you start. You just set-up an account, and it will walk you through the steps to publishing your own book. Some of the benefits of it are that it's entirely in your control. There are tools there that help you to format it. Change the font, change the layout, there are preview tools that show you how your book will look on different devices. You can play with images, sizes, and more. Whenever you are ready, it will process the file and you are ready to go. We have a cover creator tool as well, using which you can design your own cover if you don't have one already. What's exciting about it is that all of it is completely DIY. All the controls are in your hands and you don't have to wait for the permissions from the publisher. You don't have to go through the traditional route of finding an agent, finding a publisher, you know you can be up and running in a day!

d What does Amazon do from its side to help publicise these budding authors?

Neil: There are few programs that you can enroll in that will help the book get featured. One is called KDP select. If you sell your book exclusively in the Kindle

store, you will get sort of extra promotional perk from Amazon. You can run promotional deals, like a countdown deal where say you lower the price for five days and it incentivises people to buy at that lower price and the books that are enrolled in that count down deal program are featured on a special page on Amazon. Related to that KDP select program, there is another subscription reading program we have launched just in September this year in India called Kindle Unlimited. It's a great program and there is a lot of promise for it in India. For ₹199 per month people who are voracious readers can sign-up for this subscription program at Kindle Unlimited and read as many books as they want. So if your book is enrolled in KDP select, it's also available in KU. Promoting books and getting readers to find the book is a challenge for every author no matter how they are published – traditionally or self published. I've written four books myself and it has always been a problem but the digitization of storytelling and books have made it a whole lot easier to reach a global audience and to do so fast.

d Is there a kind of a voting or a peer review process that gets books noticed?

Neil: In terms of getting your book published, there is no review at all. As for the publicising the book more the flywheel

effect kicks in. Say you get your friends to write reviews you get that flywheel spinning a little bit, because on Amazon, books that have more reviews and better reviews, the algorithm decides what books get featured higher up the scale and would pay attention to those reviews and start automatically featuring that book up the chain, so it's pushing it up the chain. So increased sales, great reviews.

d Have there been any success stories through this platform? Like authors hitting the NYT bestseller lists?

Neil: Yes, so one of the books that we were talking about was fifty shades of grey. It started as a self publish KDP and later it got the attention of a traditional publisher and then they published it in hardcover and paper. On my trip here we met an Indian guy who has some quarter million downloads for all the books he has written.

d Speaking of stats can you share some?

Neil: I can tell you that of top 100 Kindle books on Amazon in India, 20 of them are self published. In other markets like the European markets it's up to 33% in France and almost 50% in Germany. Self publishing books used to be viewed as vanity project, people doing their own books but now they are best sellers. **d**

(Blipp this page for the full interview)

Unwind

Sometimes technology is so disruptive that it makes you question its existence and that of the inventor's motivations.

Community

Developing your own game isn't easy but Microsoft's Kodu Game Lab does make it easier.

Funny tech resolutions of 2016



Be warned! We are not responsible for the malfunctioning of your funny bone!



There's an app for that

Ever wondered what it would be like if the Avengers went back to school?
<http://dgit.in/AvengersBackTS>



Easy screenshots

A Marshmallow update now makes it easier to take screenshots with Google Now on Tap
<http://dgit.in/DroidScrnsh>

Feature

Sameer Mitha

sameer.mitha@digit.in

At Digit we pride ourselves on our ability to change (Employee speak for avoiding the pink slip). We make monthly targets and work tirelessly towards achieving them (Usually with the help of some gaming sessions). But when it comes to tech resolutions for the New Year, we go all out to prove we are the nerdiest nerds that ever walked this planet (Is there any other way to get this done faster?). So, here are some tech resolutions from the best and brightest at Digit (Disclaimer: Digit is not responsible for any harm you may cause to yourself or others after reading this article).

Have you been a bad techie this year? Have you used and trashed a bunch of new smartphones? Did you hijack everyone's Facebook feeds with your angry rants when Kojima quit Konami? Are you hoarding gadgets from the early 80's in your basement? Well, if you are doing all those things you need some new resolutions. So, read on and begin your quest of becoming a better nerdizen of the world.

I will look at the road and not my phone when I walk

People looking at their smartphones and walking on the road, if you thought that the zombie apocalypse was something to look forward to, you are wrong. We are already there – lost in our small screens, walking and talking safety hazards. A man was recently released from prison after 44 years and he couldn't believe how people navigate without looking at the road. Time for more participation in the real world, maybe?



I will check my sources before posting/sharing something on Facebook

We've become a generation of believers. We believe anything and everything we read/watch/write on Facebook without the slightest idea of the authenticity of this content. Then, just to showcase our brilliant Facebook research skills, we go around



sharing these nonsensical and mostly fake stories, poisoning news feeds around the world. We need to stop! You need to stop! (and while you are at that stop sending soul crushing Candy Crush/Farmville requests too). Just because someone you follow posted a quote with a photograph

of Einstein does not mean that Einstein actually said it, unless it is $E=mc^2$ (he actually said that)! A great New Year's resolution would be to check the source before you endorse a post.

I will not talk to my phone, like it's a person

It is a voice assistant that can help you make an appointment, send a text and remind you to pick up food, and is not your personal shrink. This is not the movie Her, and you aren't half as dynamic as Joaquin Phoenix. Get over 'her'. Saying goodbye is hard, but trust us for the sake of your own sanity and that of others around you.



I will not divorce my spouse over bandwidth consumption or WhatsApp addiction or Facebook passwords... phew!

Do not do that! Buy more bandwidth instead, and have a little faith. The number of court cases where couples get divorced for

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Block the Force!

If you still haven't watched the latest addition to the Star Wars empire, you can use this to block all spoilers <http://dgit.in/BlkForce>



Check your social media!

The US plans to screen visa applicants' social media accounts after discovering lapses recently. <http://dgit.in/usVisa>



these reasons is so insane that it's actually become a joke. We have heard about one court case where the couple was getting divorced because the husband spent more time with his dog than his wife (which literally takes a man's best friend to a whole new level). But seriously, spend time with your loved ones. You don't want to look up from your virtual world and find them gone.

I will educate myself with more than my degree

This is a very serious and important tech resolution. It will not only ensure that you remain knowledgeable, but will also ensure the continuing survival of our species as an intellectual race, and not how we have been described in the movie *Absolutely Anything* (go watch that movie!). We have seen the launch and success of websites like BuzzFeed, 9gag and many more. As much as we love the humour and sarcasm (and flying cats), we think people need to spend some time reading stuff that matters. It is baffling that people don't know who the President of the country is, or how many states there are in India, and these aren't school kids we are talking about – these are fully grown adults. Imagine that! Do you know who the President of India is?

I will stop being an insufferable know-it-all

Just because you've got a search engine at hand, doesn't mean you really know anything. Want proof? Bet you we could find five research papers that prove "conclusively" that video games increase violence among kids, and five others that say they reduce violent tendencies. And before you use any of them as a citation, please do us a favour and read the entire report. Don't just read three lines of a story and presume to know everything. Remember no one liked Professor Lockhart from the Harry Potter books. So stop being that person. Just do the world a favour, and stop.

I will no longer wear the "Windows Phone" Blinders

This New Year resolution comes from our beloved news writer, Shrey. Every time a new app comes, he jumps to his Lumia 620 from 1965 and checks if the app is available. Alas, to his



disappointment, he goes back to work without another comment. In Windows we have faith, and we are optimistic that it will improve the app ecosystem by the end of 2016 (Are you listening Microsoft?). People like Shrey are seriously contemplating moving on from the Windows ecosystem in 2016.

I will hopefully not break my gaming controller

Have you played Bloodborne? Dark Souls? You get the idea.

I will talk face-to-face more than text

Wasn't this last year's resolution? What is the point of stretching a conversation for an entire day when you can wrap it up in 15 minutes? It's called Facetime/Hangouts/Skype. Also, we do not understand the logic of abbreviations. Would you understand a text saying, "B der by 8. C u. gt da fd"? Seriously, you got that?

I will actually eat my food before it gets cold instead of instagramming it

Okay, so there is a technical term called Food Porn. Just like regular adult films, food porn requires a certain degree of production quality to 'wet' your appetite. You are no star producer, you do not know how to frame a shot, and no matter what phone or camera you buy, it is not going to look good. Wasn't the point to pick up the fork and knife when the food arrives, instead of a smartphone? We need to change that! If you need your food to look sexy, watch an episode of MasterChef Australia.

I will look at you rather than my phone when talking to you!

Unless you are reading this article, stop looking at your phone. And, even if you are, look around and make sure you are not a part of an ongoing conversation (unless time has halted for you because of this brilliant writing). What in the name of Jack Sparrow do you do on your phone so all the time?

I will try and refrain from being a pouting self-obsessed person

We think people don't want to keep their resolutions, since this was one we covered last year as well. But wait, there's



Firefox drops 64 bits

Mozilla released an official 64bit version of its popular browser, Firefox for Windows
<http://dgit.in/Firefox64>



Tragedy and Entertainment

Google's year in search shows the biggest searches are either tragedy or entertainment
<http://dgit.in/tragicEnt>

Feature

progression. 2015 actually saw the launch of a selfie spoon, and as the name describes it, this measly little contraption is a selfie stick at one end and a spoon at the other. We do not want to see a half-chewed samosa in your mouth! Come to think of it, we do not want to see another pouting image, either. You do know that selfie addiction is a proven psychological disorder right? Of course, we're kidding, but it deserves to be. Do not do this next year, maybe? Actually, never mind, you're probably clicking one right now, anyway.



I will try not to be a WiFi addict.... Hopefully

A very interesting quote (not from Facebook) says, "I'm ready to go to rehab for my addiction to the Internet, as long as they have WiFi". Whoever wrote that, they were kidding people! We have become parasites desperate for certain aspects of technology. Last year, it was entering someone's house and demanding a charger. This year, it is all about the Wi-Fi password. What happened to the good old friendly smile and awkward hug greetings?



I will not write a First Impressions Review

Yes you're a fresh off the boat tech blogger and you've got yourself a shiny new gadget on the day of its launch. We get your excitement and your ineptitude, but do you also have to be an underhanded tool and cash in on keyword searches? What in glob's name is a first impressions review anyway? How can a first impression be a review? Those who have been keeping a keen eye on our YouTube channel, would have realised that even we have succumbed to the lure of keyword optimization. But those shenanigans are a thing of the past. Rest assured, the SEO dweeb who was responsible, has been taken care of. Our collective resolution here at digit is to hunt down these first impressions reviewers and tickle them to death. Sounds cute? Trust us, it's not.



I solemnly swear that I am up to no good!

If you did not get it, go get your nerd game on and read Harry Potter!

A study has proven that those who have read Harry Potter are generally calmer and happier. Like most of you, I spent my new years drunk, sobbing and reaching home to realize that my house keys were left at the party that is now 50 kms away, and Google Maps is asking me to swim across the Pacific to get there.

Nonetheless, my resolution is to keep monitoring mankind from my orbital ship and making such lists of resolutions and decisions that people make. The first one for 2016 is to get people to spend money they do not have to buy things they do not need, to impress people they do not like. Why else would you spend ₹92,000 on an iPhone? Is your New Year resolution to buy the new iPhone?

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Speedtest.net ditched Flash

Speedtest.net is the latest of the websites to let go of Adobe Flash.

<http://dgit.in/SpeedtestFlash>



Harry Potter audition!

Watch Daniel Radcliffe audition for Harry Potter in this incredibly cute video

<http://dgit.in/HPaudition>

'Duh'sruptive technology

Sometimes technology is so disruptive that it makes you question its existence and that of the inventor's motivations. Here are a few innovations that fit the bill.

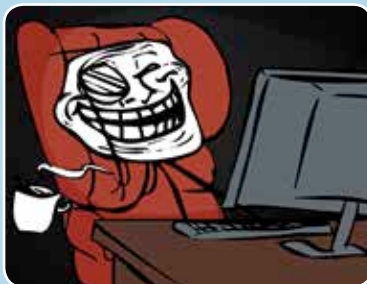


Kitty Litter

Whatever made the inventor so engrossed with something as gross as cat poop, we don't know. Don't get us wrong, he did a service to mankind and we are very thankful for his invention. But experimenting with poop day in and day out just to get the right blend? That speaks of some hard determination towards excretion.

The Internet

What could ever be more disruptive and devious than the Internet. A game changer like no other, the Internet is responsible for the lowering the collective IQ of a generation by creating an unhealthy dependence and also by enabling trolls to up their game with the added anonymity. What next, IoT? More like RIOT!



ForkChops

It's a fork, a knife, a pair of chopsticks, a skewer, a hairstick, a back scratcher, a personal safety device and nose hair un-entangler. Well, you get the gist. This mother of all inventions was expected to disrupt the entire ethos of the world of cutlery but ended up being like every other "innovative" Kickstarter project out there.



24-hour NEWS

Truly the bane of mankind, 24-hour NEWS originated in the United States with CNN and soon enough was followed by one and all. Needless to say, the fall of ethics and denigration of all things holy about journalism began from this one point. Disruptive? Yes. Good? In a remote manner, yes. But by far and large, it was the worst thing to happen to NEWS

MP3

The folks over at the Fraunhofer Institute would never have imagined that their CODEC would change the game. And it wasn't just the CODEC, a little later came Napster which really helped propel piracy and then Metallica stepped in. We all know how the story ends. MP3s made it a lot easier for guys to make mix-tapes for their lady friends.



The irony that is 'Disruption'

The term 'disruptive' technology stopped being what it was first described to be. Every other technology claims to be disruptive and the term has simply entered the dictionary to be described as a Silicon Valley buzzword. In order to continue being disruptive, a product has to evolve and this leaves a hole in the market for cheaper alternatives in the same vein.

Wileyfox now available

The CyanogenMod powered Wileyfox is now available for around 13k <http://dgit.in/WileyFoxCM>



3-D print blood vessels

Researchers in Lawrence Livermore have successfully 3D printed blood vessels which can assemble themselves once in your body. <http://dgit.in/PrintBloodVessels>

Unwind

How we unwind

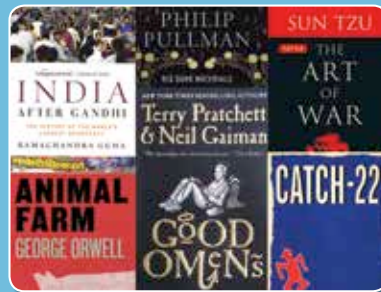


It's Time for TED

This month's earworm is courtesy of TED. All it took was an invite for TEDx-Gateway 2015 and Jayesh easily took to the soundtrack the folks had running at the venue. And true to his style, came back and put the darn song on loop for the remainder of the month. Our favourite part? Kathryn Schulz's excerpt.

Giving the classics a read

When Amazon surpassed Flipkart, they'd come out with some sweet deals and being book nerds, it was obvious that we'd end up buying more books. Be it for stashing in some corner of the house or for actually giving it a read. Mithun, Abhijit and Jayesh shopped their way through to a nice deal and a nice read.



CS : GO

When news of the R8 Revolver in the Winter Update hit the airwaves, Abhijit and Mithun quickly fired-up CS:GO to try out the ungodly weapon. Little did they know that this would soon develop into addictive early morning sessions. In their defence, the state of sleepless stupor was best to achieve full immersion.

digit DIARY

GREAT EXPECTATIONS

It's a time of great despair in the Digit star system. The outcome of the new Star Wars movie is in dispute.

Faced with a nerve-racking one week delay over launch dates, the Sith are wreaking havoc on the fledgling planetary system. The Spoiler Federation have formed an insidious blockade around them.

Confronted with the likelihood of one of the biggest movies of the decade being spoiled, the young padawans have sought refuge from the reaches of Darth Trolus. The Spoiler Legion has a strong presence in the Commentulan asteroid belt and the only recourse for our brave heros has been to install blocker extension subsystems to their craft. Only the opening of the box office plans can restore freedom to the galaxy....



Every month we recognise the best article written by our community members and publish it here. Keep up the good work, Digitians!

Kodu: The game changer

What could be a better way to welcome the new year than with a DIY on creating your own animated game using Kodu Game Lab?



Yoben
Thounaojam

If you're bored of crushing the same old candies, if the fruits have gotten too stale to slice like a 'ninja' anymore, and if pitting plants and zombies against each other feels 'oh so 2014', perhaps it's time to channel the tedium of these hackneyed games into something productive. Try your hand at making an original game with Microsoft's 'Kodu Game Lab', a free game developing software

that's also the simplest one around. With no coding skills or a game developing background required to tinker around with it, building a brand new game of your own has never been easier.

If the number of technical specs confuses you, worry not, they are present in even the most basic computers. Kodu is also available as an Xbox 360 Indie Game.

Interface

Kodu, apart from being the name of the software, is a character that evolves around every game you make. It helps users avoid having to type in the codes by having them construct programs using visual elements. Moreover, rather than a bitmapped or 2D display, programs are executed in a 3D simulation environment, similar to Alice [<http://dgit.in/AliceProjj>].



Kodu lets you choose an existing world or create a new one

All about Kodu

Kodu is a new visual programming language made specifically for creating games. With a children-friendly and all-round enjoyable composition, the language's visual nature allows for rapid design using an Xbox game controller or a mouse and a keyboard for input.

How to get it

All you need to do is to visit www.kodugamelab.com and follow the instructions to download it (File size: 197.1 MB). You will need the following things:

- Operating System - Windows (7, 8.x, 10, Vista, or XP).
- Graphics card - One that supports DirectX 9.0c,
- Shader Model 2.0 or higher
- .NET Framework 4.0 or higher
- XNA Framework 4.0 Redistributable



The lower middle part of the screen has all the tools you need

After you open Kodu, in the main menu, you will have the option to either load a pre-made world or make a new one. Once you do that, you will get all the tools to make a game on the lower middle part of the screen. There are more than hundreds of worlds to choose from.

The very basic tools include:

- Run Tool - Used to play the game.
- Object Tool - Used to add, move, and program characters.
- Up/Down - Used to lower or raise a part of the terrain.
- Ground Brush - Used to add and delete arena.

Also, from the 'Help' menu, you can find answers to all the questions you might have about Kodu.

Making a simple game

First and foremost, you don't have to start from scratch. You can simply load a world and make a few or many changes to create



Oops, runway too short!

Watch the terrifying footage of a Qatar Airways flight abort take off
<http://dgit.in/QatarAbort>

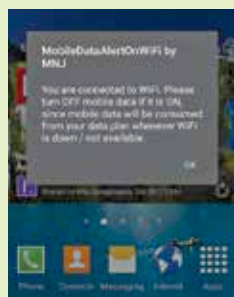


Order with emoji?

For all the lazy bones, Domino's Australia now allows you to order pizza using just emoji.
<http://dgit.in/PizzaOrdr>

Digit Squad

COMMUNITY CREATIONS



Mobile data alert app

When you're using an unreliable Wi-Fi connection, your phone automatically keeps switching to the cellular network to access the Internet in case of poor connections. Even though you were connected using a Wi-Fi connection, you end up getting charged for mobile data. To fight this little pain, Jayaram Manjeri, an Android enthusiast and hobbyist

has come up with a simple app that reminds you to turn off your mobile data if you had forgotten to turn it off when you switched to a Wi-Fi connection. You can download "Mobile Data Alert If Wifi On" from the Play Store <http://dgit.in/MDAwifi>



You can pick one of the many pre-loaded objects for your game

You could add more characters and objects like trees and walls and make them respond to the actions of the drone with the same tools and in the same way. With the instructions given above, you could make a simple game of shooting one another or saving yourself from being shot. The method might sound very vague and confusing but when you get down to actually doing it, you'll realise it is anything but that.

Kodu is a great software for learning new things and having fun. Many schools have included its usage in their curriculum. If you like using it, you might want to check out Microsoft Imagines' website [<https://www.imaginecup.com>], where you can make games for Windows and take part in worldwide competitions. Happy gaming! 🎮

your very own version of a game. Game-makers first need to choose an arena/terrain on which the game will be placed – you have almost 121 types of land to choose from. To do this, you need to select 'Ground Brush', click on the colourful icon above it, and start adding the terrain by clicking on the empty blank space above.

Then comes the most interesting part: of adding a character or performer to the game. Kodu, being one of the protagonists



You can pick one of the several tutorials to help you get started

itself, can be added and made to move and function but there are many more you can add, from submarines to drones. These can be selected and dragged into the arena with the 'Object Tool'. For instance, if you choose the drone, this should be followed by a click on the drone which will show you options to enable the character to move and shoot, among other actions. To program the drone to work, you need to right click on it to program, copy, change size, etc, and left click to move it. When you click on 'Program', you will get an option to specify what the drone will do when something happens or when something is done to the drone. When you click on 'When', you get options like keyboard, mouse, scored, and hit, and then you click on 'Do' to specify what it will do when you press the arrows on the keyboard or do what you have specified in 'When'. For example, if you choose keyboard, then you will be able to move the drone with the arrow keys.



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